

## SOUTH AFRICAN PERISPORIALES.

## I. PERISPORIACEAE.

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(With Plates LVII—LXVI.)

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The Perisporiaceae and allied fungi are very plentiful in South Africa, especially in forest regions and in warm districts with a fairly plentiful rainfall. The specimens in the Union Mycological Herbarium are mostly from the Woodbush forests in the Zoutpansberg, from the Knysna, and from the coast regions of Natal; there is also a fair sprinkling from other parts of the coast and from Natal as far inland as Pietermaritzburg. The Middle and High Veld of the Transvaal are only represented by a single specimen, a species of *Dimeriella* collected at Bandolier Kop.

All that is known of the South African Perisporiales up to the present is comprised in diagnoses and descriptions of fungi collected by Professor MacOwan and Dr. J. Medley Wood, and published for the most part by Kalchbrenner and Cooke in *Grevillea*, 1880–1882, and in a few descriptions of fungi more recently collected and published in the *Annales Mycologici* and elsewhere. All the earlier work was done in the Grahamstown district and the coast region of Natal, so that a large part of the Union was left totally unexplored so far as this group was concerned.

In working through the material in the herbarium, a number of new species have come to light. It seems advisable, therefore, to publish a list of the species at present known without attempting to make the collection more complete.

Through the courtesy of Dr. Schönland and of Dr. Peringuey, of the South African Museum, I have been able to examine all of Professor MacOwan's fungi which are in their possession. Dr. Medley Wood has donated his private collection to Mr. Pole Evans, and it is deposited in the Union Mycological Herbarium. He has also kindly loaned me the sheets of Perisporiales in the Natal Herbarium collection. I have thus had access to nearly all the type specimens of the fungi described by Kalchbrenner and Cooke.

Many of these have been described only in general terms, and in some cases wrongly diagnosed, and this has caused considerable confusion. Those species which have been adequately described have been published in periodicals not readily accessible. I have therefore given in full the descriptions of known species as well as of new ones.

I am indebted to Miss S. M. Stent for the determination of the greater part of the host plants, and to Dr. J. Medley Wood, Professor J. W. Bews, and Miss M. Franks (Mrs. Howard Flanders) for the identification of a number of plants collected in Natal. I should also like to express my indebtedness to Miss A. Pegler and others who have contributed a number of interesting specimens.

A series of permanent microscopic preparations has been made of all the fungi examined, and is kept for reference in the Union Botanical Laboratory, Pretoria, where it may be seen by anyone who is interested in this group of fungi. The method adopted in preparing the slides is a modification of that used by Gaillard, the procedure being as follows: The fungus colony on the leaf surface is covered with a drop of collodion made according to the following formula:

|                   |   |   |   |   |          |
|-------------------|---|---|---|---|----------|
| Soluble guncotton | . | . | . | . | 4 parts. |
| Absolute alcohol  | . | . | . | . | 10 "     |
| Ether             | . | . | . | . | 32 "     |
| Castor oil        | . | . | . | . | 2 "      |
| Lactic acid       | . | . | . | . | 2 "      |

This formula, which is the one used by Gaillard, was found to form a collodion rather too thick for most purposes, and can be made more fluid by diluting by one-third to one-half with a mixture of—

|                  |   |   |   |   |           |
|------------------|---|---|---|---|-----------|
| Alcohol absolute | . | . | . | . | 10 parts. |
| Ether            | . | . | . | . | 32 "      |

The drop of collodion is allowed to dry on the leaf, and the pellicle thus formed is then carefully detached and placed on a glass slide. The fungus colony adheres to the collodion, and can thus be placed on the slide in the exact position which it occupied on the leaf. The collodion is now re-dissolved by means of the mixture of alcohol and ether mentioned above, and the preparation may be dehydrated and mounted in Canada balsam.

In the enumeration of species which follows, unless otherwise stated, the numbers in brackets refer to the numbers in the Union Mycological Herbarium, which have been quoted by Sydow as I. B. Pole Evans' numbers. Among the specimens in the herbarium by far the greater number belong to the genus *Meliola*, of which over thirty species are described; and in the grouping of the species of this genus Gaillard's classification is followed, which is based on the septation of the spores and the presence and form of mycelial and perithecial setae.

All drawings have been made with the aid of the *camera lucida*, and are

on the same scale. Perithecia were drawn with Zeiss objective D and No. 2 ocular; mycelium and spores with the same objective and a No. 5 ocular; and all appendages of mycelium and perithecia with a No. 4 ocular.

The colour of the mycelium, etc., is recorded as seen by transmitted light under the microscope, and the references are to Ridgway's "Colour Standards and Nomenclature."

#### PERISPORIACEAE.

Mycelium superficial, usually conspicuous and covering the substratum with a dark growth; rarely absent and rarely forming a stroma. Perithecia formed on the mycelial hyphae or rarely on a stroma, black, more or less globose, astomous, asci numerous, usually paraphysate. Spores very various. In some genera several forms of conidia are produced as well as ascospores, and some, *e. g. Capnodium*, are very rich in the number of their conidial forms, and comparatively rarely produce perithecia.

In a number of genera the hyphae of the peritheciogenous mycelium bear small lateral processes, known as hyphopodia. These are very various in form, and are usually 1-2-celled.

The Perisporiaceae chiefly occur on living leaves and young parts of plants; several genera, however, are found on decaying vegetable matter.

#### Key to Genera.

##### A. Spores 2-celled.

###### a. Aerial mycelium conspicuous.

###### 1. Perithecia containing a single ascus.

*Balladyna*.

###### 2. " " numerous asci.

###### o. Spores hyaline.

###### x. Perithecia smooth.

*Dimerosporium*.

###### xx. Perithecia setulose.

*Dimeriella*.

###### oo. Spores fuscous.

###### x. Perithecia smooth.

*Dimerium*.

###### xx. Perithecia setulose.

*Phaeodimeriella*.

###### b. Aerial mycelium none or poorly developed.

*Parodiella*.

##### B. Spores 3- or more celled.

###### a. Spores transversely septate.

###### 1. Spores hyaline.

*Zukalia*.

###### 2. Spores brown.

*Meliola*.

###### b. Spores muriform.

*Capnodium*.

#### BALLADYNA.

Mycelium fuscous, septate; hyphopodia continuous or septate; mycelial setae long, rigid. Perithecia ovate-globose, black, stipitate, mono-ascate. Asci globose, 8-spored. Spores brown, smooth, one-septate.

*Balladyna velutina* (B. & C.) v. Höhn.

*Annales Mycologici*, vol. x (1912), p. 16.

(*Asterina phaeostroma* (Cke.), Grevillea, vol. x (1882), p. 130.)

(*Asterella phaeostroma* (Cke.), Sacc. Syll. Fung. ix, p. 396.)

Amphigenous, forming thin, effuse black colonies, frequently confluent. Hyphae radiating, branched, light-brown, 6–7  $\mu$  thick, frequently septate, bearing numerous hyphopodia. Hyphopodia unilateral or alternate, unicellular, sub-globose with truncated angles, or narrow ovate. Mycelial setae numerous around the perithecia, simple, more or less flexuous or curved, black, opaque, about  $100 \times 5\text{--}6 \mu$ . Perithecia numerous, small, membranaceous, sub-pellucid when immature, smooth, 65–70  $\mu$  diam. Asci one in each perithecium, paraphysate, globose, 35–40  $\times$  25–30  $\mu$ , 8-spored. Spores conglobate, fuscous, 2-celled, cells subequal, slightly constricted at the septum, 21–22  $\times$  9–11  $\mu$ .

On leaves of *Pavetta natalensis*, Inanda, Natal, September, 1881, J. Medley Wood (Wood No. 656).

On leaves of *Pavetta obovata* and *P. Bowkeri*, Isipingo, Natal, 13/5/13, E. M. Doidge (6627 and 6634).

On leaves of *Pavetta* sp., Kentani, 15/3/15, A. Pegler (8895), (Pegler No. 2305); Woodbush, Zoutpansberg Dist., 4/8/11, E. M. Doidge (1768).

On leaves of *Tricalysia lanceolata*, Stella Bush, near Durban, 2/7/12, E. M. Doidge (2523).

On leaves of *Tricalysia floribunda*, Umgeni, near Durban, 27/5/15, E. M. Doidge (8981).

#### DIMEROSPORIUM

Mycelium well developed, black, usually sub-crustaceous. Perithecia superficial, depressed-globose, sub-membranaceous, carbonaceous. Asci clavate to ovate, 8-spored. Spores 2-celled, hyaline.

*Dimerosporium Osyridis* Wint.

Sacc. Syll. Fung. ix, p. 401.

Winter, Flora, 1884, p. 7.

Mycelial hyphae fuscous, branched, radiating, forming black, round, irregular spots up to 2 mm. diam. Perithecia in groups, depressed-globose, rugulose, glabrous, black; under the microscope almost pellucid, fuscous, 150–210  $\mu$  diam. Asci cylindrical-clavate, very briefly stipitate, 8-spored, 42–52  $\times$  10–12  $\mu$ . Spores obliquely distichous, oblong, 2-celled, hyaline, 9–12  $\times$  4–5  $\mu$ , constricted at the septum. Paraphyses filiform, equalling the asci.

On living leaves of *Osyris compressa*, Cape of Good Hope, MacOwan.

I have not seen this specimen. The above, therefore, is simply a translation of the original description.



*Dimerosporium Acokantherae* P. Henn.

Sydow has determined Wood's Nos. 6450 and 6461 as *D. Acokantherae* P. Henn.; the fungus on the leaves of *Acokanthera spectabilis* under these numbers is not a *Dimerosporium*, it has the shield-shaped perithecia of the *Microthyriaceae*. The spores are immature.

*Species Excludendae.*

*Dimerosporium MacOwanianum* Thuem. = *Dimerium MacOwanianum* (Thuem.).

*Dimerosporium Psilostomatis* Thuem. = *Dimerium Psilostomatis* (Thuem.).

*Dimerosporium verrucicolum* Wint. = *Asterodothis solaris* (Wint.) Theiss.

DIMERIELLA.

Mycelium poorly developed. Perithecia sub-globose, astomous, setulose. Asci 8-spored. Spores 2-celled hyaline.

*Dimeriella annulata*, Syd.

Ann. Myc. x (1912), p. 36.

Mycelium amphigenous, very slender and slightly developed, but distinctly developed in concentric rings and forming spots  $\frac{3}{4}$ –1 cm. diam. Hyphae slender, not much branched, light brown, and bearing sarciniform conidia. Conidia transversely 3-septate and longitudinally 1-septate, light brown.  $12\text{--}17 \times 7\text{--}10 \mu$ . Perithecia superficial, globose, astomous, black, under microscope fuliginous,  $50\text{--}100 \mu$  diam., bearing a few rigid black-brown setae,  $50\text{--}120 \mu$  long and  $4 \mu$  thick. Asci sub-globose or ovate  $25\text{--}30 \times 20\text{--}25 \mu$ , 8-spored. Spores ellipsoid, rounded at both ends, 1-septate and constricted, at first hyaline then brown,  $17\text{--}24 \times 8\text{--}12 \mu$ , the loculi slightly unequal.

On leaves of *Gymnosporia* sp., Bandolier Kop, Zoutpansberg Dist., 11/8/11, E. M. Doidge (1832).

*Dimeriella claviseta* Doidge n. sp.

Epiphyllous, forming thin, spreading spots of varying size; mycelium much-branched, fuscous, formed of radiating flexuose hyphae  $3\text{--}3.5 \mu$  thick. Perithecia superficial, scattered or sub-gregarious, sub-hemispherical, black, carbonaceous, with a false ostiole,  $90\text{--}115 \mu$  diam., bearing near the base 9–15 setae. Setae club-shaped,  $15\text{--}55 \mu$  long,  $3.5\text{--}7 \mu$  thick at the base, septate and often constricted at septa, becoming broader above; apex truncated and variously lobed, frequently 2-lobed, lobes also truncated. Asci numerous, paraphysate, 8-spored, sessile, clavate-cylindrical, rounded and not thickened at the apex,  $40\text{--}50 \times 18\text{--}20 \mu$ . Paraphyses simple, filiform, longer than the asci. Spores conglobate or distichous, hyaline, 1-septate,

slightly constricted, somewhat acute at the ends, oblong-ellipsoid, one cell slightly broader than the other, bi-guttulate when immature,  $15-18 \times 5-7 \mu$ .

On leaves of *Vernonia angulifolia*, Winkle Spruit, Natal, 6/7/11, E. M. Doidge (2511); Winkle Spruit, 20/5/15, E. M. Doidge (9011).

#### DIMERIUM.

Mycelium abundant (less so in species parasitic on other Perisporiales), black, sub-crustaceous. Perithecia superficial, globose or ovate. Asci 8-spored. Spores 2-celled, fuscous.

#### Key to Species.

- |                                          |                           |
|------------------------------------------|---------------------------|
| A. Spores small, $7-11 \times 3-4 \mu$ . | <i>D. intermedium</i> .   |
| B. Spores $15-25 \mu$ long.              |                           |
| a. Spores $6-9 \mu$ broad.               | <i>D. Psilostomatis</i> . |
| b. Spores $10-13 \mu$ broad.             |                           |
| 1. Spores rounded at both ends.          | <i>D. Gymnosporiae</i> .  |
| 2. Spores somewhat acute at each end.    | <i>D. MacOwanianum</i> .  |

*Dimerium intermedium* Syd.

Ann. Myc. x (1912), p. 37.

Epiphyllous, parasitic on the mycelium of a *Meliola*. Hyphae very poorly developed. Perithecia in groups, ovate or globose, black, narrowed above into a papillum which terminates in a pore,  $90-150 \mu$  diam. Asci fasciculate, numerous, clavate-cylindrical,  $32-38 \times 8-10 \mu$ , sessile, 8-spored. Ascospores distichous, sub-fusiform, 1-septate, not constricted or slightly so, at first hyaline, then yellow-brown,  $7-10 \times 3-3.5 \mu$ , the upper loculus broader. Paraphyses slightly longer than the asci, filiform, numerous. Pycnidia similar to the perithecia but smaller, spores elliptical, one-celled, hyaline 2-guttulate  $5.5-8 \times 3-4 \mu$ .

Parasitic on *Meliola* sp. on leaves of *Isoglossa Woodii*, Amanzimtoti, Natal, 10/7/11, E. M. Doidge (1578).

On *Meliola Rhois* on *Harpophyllum caffrum*, Kentani, 17/2/15, A. Pegler (8851). The spores are slightly larger in this specimen, averaging  $11 \times 4 \mu$ .

*Dimerium MacOwanianum* (Thuem.) Doidge.

(*Dimerosporium MacOwanianum* (Thuem.), Sacc. Syll. Fung. i, p. 53.)

Colonies epiphyllous, numerous, often confluent, black, radiating from the centre. Hyphae very sinuous, branched, anastomosing, warm sepia (R. XXIX.)  $9-10 \mu$  thick with fairly numerous alternate or unilateral hyphopodia, which are unicellular, globose, about  $10-11 \mu$  diam. Perithecia black, carbonaceous, large, up to  $120 \mu$  diam. Asci almost pyriform, 8-spored, hyaline, with a thin wall,  $75 \times 50 \mu$ . Spores clavate, bilocular,

strongly constricted at the septum, upper part  $10.5\ \mu$  thick, lower part  $13\ \mu$  thick, the whole spore  $25\ \mu$  long, somewhat acute at each end, fuscous.

On leaves of *Celastrus buxifolius*, Somerset East, July, 1876, P. MacOwan (MacOwan 1250).

*Dimerium Psilostomatis* (Thuem.) Sacc.

Sacc. Syll. Fung. xvii, p. 537.

(*Dimerosporium Psilostomatis*, Sacc. Syll. Fung. i, p. 54.)

Hypophyllous, rarely epiphyllous, forming effuse, black, very thin, more or less orbicular spots. Hyphae slender, branching obscurely septate, buffy olive (R. XXX)  $4-5\ \mu$  thick, with fairly numerous unicellular, alternate or unilateral, ovate hyphopodia about  $7 \times 3.5\ \mu$ . Perithecia small, sub-globose, carbonaceous,  $80-85\ \mu$  diam., surrounded by numerous radiating hyphae darker in colour than the ordinary hyphae and without hyphopodia. Asci broadly clavate, wall thickened at the apex, narrowed at the base, often slightly curved,  $45 \times 24-26\ \mu$ , 8-spored. Spores in three rows, narrow elliptical, 1-septate, constricted at the septum with equal loculi, rounded at both ends,  $16-20 \times 6-9\ \mu$ , fuscous. Paraphyses none.

On leaves of *Plectronia ciliata*, Somerset East, December, 1876, P. MacOwan (MacOwan 1291).

On leaves of *Plectronia Guenzii*, Woodbush, Zoutpansberg Dist., 3/8/11, E. M. Doidge (1744); Claridge, Natal, 31/5/15, E. M. Doidge (8991).

*Dimerium Gymnosporiae* (P. Henn.) Syd.

Syd. Ann. Myc. vii (1909), p. 546.

(*Dimerosporium Gymnosporiae* (P. Henn.) Sacc. Syll. Fung. xvi, p. 408.)

Mycelium epiphyllous or amphigenous, sub-crustaceous, radiating, effuse, black. Hyphae branched, septate, sinuous, with a few small unicellular hyphopodia,  $7-11\ \mu$  thick. Perithecia gregarious, membranaceous-subcarbonaceous, globose, rugulose, about  $90-110\ \mu$  diam.; asci ovoid, rounded at the apex, subtunicated, attenuated at the base, sometimes subtipitate  $35-50 \times 30-45\ \mu$ , 8-spored, paraphysate. Spores conglobate, ovoid 1-septate, constricted, fuscous,  $18-24 \times 10-13\ \mu$ .

On leaves of *Gymnosporia* sp. Umbelusi, Portuguese East Africa. C. W. Howard (523).

#### PHAEODIMERIELLA.

Mycelium well developed, black, effuse. Perithecia globose, setulose. Asci 8-spored. Spores 2-celled, fuscous.

*Phaeodimeriella capensis* Doidge n. sp.

Hypophyllous or amphigenous, forming effuse, radiating, carbonaceous colonies  $3-5\ \text{mm.}$  diam. Hyphae radiating,  $6-7\ \mu$  thick, with unicellular sub-opposite or alternate hyphopodia  $8-12 \times 6-7\ \mu$ , and opposite branches.

Perithecia numerous, black, globulose, carbonaceous, minutely verrucose, 140–160  $\mu$  diam., setulose. Setae 15–25, uncinata, about 55–65  $\mu$  long and 5  $\mu$  thick at the base, somewhat attenuated towards the blunt apex. Asci numerous, paraphysate, elliptical, 8-spored, thickened at the apex, sessile, 55–70  $\times$  12–14  $\mu$ . Spores sub-distichous, fuscous, 1-septate, ellipsoid, very slightly constricted at the septum; one cell slightly broader than the other, 16–18  $\times$  4  $\times$  5  $\mu$ ; loculi bi-guttulate. Pycnidia similar to perithecia, conidia ellipsoid, fuscous, unicellular, 2-guttulate, about 14  $\times$  3  $\mu$ .

On leaves of *Apodytes dimidiata*, Knysna, C.P., 3/6/12. P. J. Pienaar (2426).

#### PARODIELLA.

Aerial mycelium none. Perithecia superficial, globose, astomous, black, adnate at the base to the leaf. Asci cylindraceo-clavate, 8-spored, typically paraphysate. Spores 2-celled, obscurely fuliginous.

#### Key to Species.

- |                                     |                            |
|-------------------------------------|----------------------------|
| A. Spores 8–11 $\times$ 4–5 $\mu$ . | <i>P. Schimperii</i> .     |
| B. Spores 26–30 $\mu$ long.         |                            |
| a. Spores 6–7.5 $\mu$ broad.        | <i>P. congregata</i> .     |
| b. „ 10–11 „ „                      | <i>P. perisporioides</i> . |

*Parodiella Schimperii* P. Henn.

Sacc. Syll. Fung. xi, p. 260.

Fung. Ethiop. i, p. 119; Bull. Herb. Boiss. i, 1893.

Epiphyllous; perithecia numerous, sub-hemispherical, 100–180  $\mu$  diam.; crowded, and forming small round groups 1–5 mm. diam. Asci ovate-cylindrical, 25–33  $\times$  18–25  $\mu$ , 4–8-spored. Spores 1-septate, hyalino-flavidulous, 8–11  $\times$  4–5  $\mu$ .

On living leaves of *Rhynchosia* sp., near Durban, 25/5/97, J. Medley Wood (356), (Wood No. 6445); Durban, 15/6/15, K. Lansdell (9015).

*arodiella congregata* Syd.

Ann. Myc. x. (1912), p. 37.

Perithecia epiphyllous, globose, very minute, 60–100  $\mu$  diam.; closely crowded and forming small round groups 1–4 mm. diam., resembling in habit a *Doassansia*; very slightly immersed at the base, astomous, wall minutely parenchymatous, under the microscope at first dark olive colour and finally more or less brown and sub-opaque. Asci varying in form and size, some ovate or sub-globose, about 30–40  $\times$  20–30  $\mu$ , some elongated, saccate, 50–65  $\times$  15–20  $\mu$ , sessile, thickened at the apex, 8-spored. Paraphyses indistinct. Spores distichous, tristichous or crowded together, elongated 1-septate, not constricted, olivaceous, 26–30  $\times$  6–7.5  $\mu$ , the upper cell usually rather shorter and broader.

On leaves of *Limnanthemum Thunbergianum*, Belfast, Transvaal, 12/11/09, E. M. Doidge (765).

*Parodiella perisporioides* (Berk. & Curt.) Speg.

Sacc. Syll. Fung. i, p. 717.

Epiphyllous; perithecia globose, 150–200  $\mu$  diam., astomous, smooth, black, superficial, adnate at the base, very closely crowded together, entirely covering the whole of the leaf surface; wall of the perithecium membranaceous, parenchymatous, olivaceous-fuliginous. Asci clavate, briefly pedicellate, rounded and thickened at apex which is traversed by a pore,  $120 \times 20\text{--}24 \mu$ , 8-spored.

Paraphyses filiform. Spores distichous, elliptic-bi-conical, 1-septate, constricted, at first each loculus is 1-guttulate, later eguttulate; the upper cell somewhat more swollen and sometimes slightly curved; obtuse at both ends, fuliginous  $28\text{--}30 \times 10\text{--}11 \mu$ .

On leaves of *Eriosema* sp., Belfast, Transvaal, 16/2/09, E. M. Doidge (574).

On leaves of *Indigofera* sp., Belfast, Transvaal, 16/2/09, E. M. Doidge (576).

On leaves of *Vigna angustifolia*, Garstfontein, Pretoria Dist., 12/2/10 and 4/12/11, P. J. Pienaar (1201 and 1958); Muckleneuk, Pretoria, 27/4/13, I. B. Pole Evans (6694).

On leaves of *Psoralea decumbens*, Newlands, C.P., 20/11/10, C. P. Lounsbury (1005).

#### ZUKALIA.

Mycelium abundant, effuse; perithecia superficial, globose, sub-astomous, sub-membranaceous, black. Asci 8-spored. Spores ovate-oblong, 2-pluri-septate, hyaline or sub-hyaline.

*Zukalia transvaalensis* Doidge n. sp.

Epiphyllous, effuse forming very thin, spreading, black colonies. Hyphae radiating, branched, anastomosing  $7\text{--}8 \mu$  thick, composed of cells about  $30\text{--}32 \mu$  long, bearing unicellular hyphopodia. Hyphopodia unilateral, alternate or opposite, globose, flattened, or sub-lobed, usually broader than long,  $8\text{--}10 \times 11\text{--}14 \mu$ . Perithecia black, globose, scattered, rather numerous, under microscope sub-pellucid, brown, smooth, with a false ostiole,  $130\text{--}160 \mu$  diam. Asci numerous, fasciculate, 8-spored, thin-walled, elliptical, or narrow-ovate, frequently slightly curved,  $70\text{--}90 \times 18\text{--}22 \mu$ . Paraphyses none. Spores distichous or tristichous, clavate, hyaline, 5-septate,  $45\text{--}55 \times 5\text{--}7 \mu$ , obtuse at both ends.

On leaves of *Eugenia Zeyheri*, Woodbush, Zoutpansberg Dist., 3/8/11, E. M. Doidge (1759).

## MELIOLA.

Fungi living on the surface of leaves, more seldom on branches. Peritheciigerous mycelium dark brown, thick, always provided with capitate hyphopodia (small 2-celled processes, which Gaillard calls abortive perithecia), and very often with mucronate hyphopodia (abortive mycelial branches), and frequently with setae (sterile, erect branches). Perithecia globose or ovoid, rarely dimidiate, carbonaceous, astomous, or with a false ostiole formed of more delicate, paler cells. Asci spherical or ovoid, rarely cylindrical or claviform, usually evanescent. Spores brown at maturity, large, transversely 2-5 septate. Conidiiferous mycelium slender, paler. Conidia fusiform, transversely septate.

## Key to the Species.

## I. Spores 3-septate.

## A. Setae none.

a. Spores 40-50  $\mu$  long.

x. Capitate hyphopodia 20-30  $\mu$  long. Spores slightly constricted. *M. manca.*

xx. Capitate hyphopodia 18-21  $\mu$  long. Spores deeply constricted. *M. natalensis.*

xxx. Capitate hyphopodia crowded 14-18  $\mu$  long. Spores slightly constricted. *M. conferta.*

b. Spores 50-60  $\mu$  long.

x. Capitate hyphopodia small, terminal cell globose. *M. Podocarpi.*

xx. Capitate hyphopodia large, terminal cell lobed. *M. speciosa.*

## B. Setae mycelial, simple and straight.

a. Spores 25-30  $\mu$  long. *M. torta.*

b. Spores 45-50  $\mu$  long. *M. ganglifer.*

c. Spores 57-68  $\mu$  long. *M. peltata.*

c. Setae mycelial, branched. *M. cladotricha.*

## II. Spores 4-septate.

## A. Setae none.

a. Spores 45-55  $\mu$  long.

x. Capitate hyphopodia lobed. *M. ditricha.*

xx. Capitate hyphopodia not lobed. *M. Hendeloti.*

b. Spores not more than 45  $\mu$  long.

x. Superficial cells of peritheciium convex, rounded.

. Cells of hyphae 25-30  $\mu$  long. *M. glabra.*

. . Cells of hyphae about 18  $\mu$  long. *M. Strophanthi.*



- xx. Superficial cells of perithecium mammillate.  
*M. Peglerae.*
- xxx. Certain superficial cells of perithecium sub-cylindrical, recurved.  
*M. inermis.*
- b. Setae perithecial.  
*M. Bosciae.*
- c. Setae mycelial, simple and straight.
- a. Setae quite straight or abruptly geniculate at the base.
- x. Capitulate hyphopodia usually opposite.  
 . Spores 35-40  $\mu$  long. *M. capensis.*  
 . . Spores 47-55  $\mu$  long. *M. Toddaliae.*
- xx. Capitulate hyphopodia usually alternate.  
 . Spores less than 35  $\mu$  long. *M. microspora.*  
 . . Spores 40-50  $\mu$  long.  
 0 Apex of setae obtuse. *M. amphitricha.*  
 00 Apex of setae acute. *M. Rhois.*  
 . . . Spores 48-55  $\mu$  long.  
 0 Setae translucent. *M. microthecia.*  
 00 Setae opaque throughout. *M. sinuosa.*
- b. Setae more or less flexuose.
- x. Capitulate hyphopodia alternate. *M. polytricha.*
- xx. Capitulate hyphopodia usually opposite. *M. rigida.*
- d. Setae mycelial, curved.
- a. Spores 38-48  $\times$  16-20  $\mu$ . *M. falcata.*
- b. Spores 50-55  $\times$  14-16  $\mu$ . *M. arcuata.*
- c. Spores 50-54  $\times$  18  $\mu$ . *M. Woodiana.*
- e. Setae mycelial, forked.
- a. Setae only forked at the tip. *M. furcellata.*
- b. Setae with more or less spreading branches.
- x. Ultimate branches usually 3-fid at apex. *M. varia.*
- xx. Ultimate branches usually bi-fid.
- 0 Main branches of setae up to 90  $\mu$  long. *M. bifida.*
- 00 Main branches of setae up to 130  $\mu$  long. *M. leptidea.*

*Meliola manca* Ell. & Mart.

Gaillard, Le Genre *Meliola*, p. 37.

Amphigenous, but most frequently epiphyllous, forming black, orbicular, or irregular, thinly carbonaceous spots, 2-5 mm. diam.; these are frequently confluent and cover the greater part of the leaf surface. Perithecigerous mycelium, consisting of slender, rather pale hyphae 7-8  $\mu$  diam., articulations distant, cells 18-30  $\mu$  long; branches remote and sometimes anasto-

mosing. Capitate hyphopodia alternate, distant, stipitate,  $21.5-29\ \mu$  long; upper cell irregular, more or less lobed,  $14.5-18 \times 14.4\ \mu$ ; mucronate hyphopodia not very numerous, paler, opposite, ampulliform, rather slender, suddenly narrowed near the apex into a short neck, measuring about  $7 \times 18\ \mu$ . Perithecia scattered or in small groups, black, globular,  $150-180\ \mu$  diam., with a false ostiole formed of paler cells, verrucose; bearing on the surface a number of sub-cylindrical, larviform appendages, terminating in a recurved point,  $60-110 \times 20-26\ \mu$  at the base, unicellular, colour russet-brown, wall rugulose. Asci ovoid, shortly pedicellate, 4-spored. Spores 3-septate, straight or slightly curved, similar in colour to hyphae, tawny olive (R. XXIX), slightly constricted at the septa, rounded at both ends,  $40-45 \times 13-14\ \mu$ .

On leaves of *Rubus rigidus*, Winter's Kloof, Natal, 17/6/11, E. M. Doidge (1574); Woodbush, Zoutpansberg Dist., 5/8/11, E. M. Doidge (1771); Cramond, Natal, 3/6/12, I. B. Pole Evans (2405); Knysna, C.P., 3/6/12, P. J. Pienaar (2425).

On leaves of *Pygeum africanum*, Woodbush, Zoutpansberg Dist., 3/8/11, E. M. Doidge (1761).

*Meliola natalensis* Doidge n. sp.

Amphigenous, mostly epiphyllous, forming round, irregular, black carbonaceous spots, 2-3 mm. diam. Mycelium radiating, branched; hyphae tawny olive (R. XXIX), somewhat sinuous and frequently constricted at the septa,  $6-8\ \mu$  thick, composed of cells  $14-18\ \mu$  long; branches usually opposite. Capitate hyphopodia alternate or unilateral, stipitate,  $18-21\ \mu$  long; basal cell short, tapering to point of junction with hypha; terminal cell broader than long, lobed usually with 2-3 lobes, which are again bilobulate,  $12-14 \times 16-20\ \mu$ . Mucronate hyphopodia rare, scattered, slender, straight or recurved, ca.  $16-18 \times 4-5\ \mu$ . Mycelial setae none. Perithecia grouped near centre of mycelium, black, globose, carbonaceous,  $130-150\ \mu$  diam., rugulose, certain of the superficial cells being prolonged into sub-cylindrical vermiform processes  $40-55 \times 18\ \mu$ , sometimes recurved at the tip. Asci 2-spored. Spores 3-septate, cylindrical, deeply constricted at the septa,  $40-44 \times 14-16\ \mu$ , straight or slightly curved, cells subequal.

On leaves of shrub unknown, Umgeni, near Durban, Natal, 27/5/15, E. M. Doidge (8980).

*Meliola conferta* Doidge n. sp.

Amphigenous, forming dull, black, sub-crustaceous colonies 1-3 mm. diam. Hyphae tawny olive (R. XXIX), straight, with numerous opposite branches,  $6-8\ \mu$  thick, composed of cells  $11-18\ \mu$  long. Capitate hyphopodia very numerous, crowded together, opposite, occasionally, on the smaller branches,

unilateral or alternate, 14–18  $\mu$  long; terminal cell variously lobed, usually with 2–3 lobes, each of which is bi-lobulate, 9–14  $\times$  11–14  $\mu$ . Mucronate hyphopodia rare, interspersed with the capitate hyphopodia, 18  $\mu$  long, pale, with a short, rather thick neck. Mycelial setae none. Perithecia (not quite mature) few, scattered, 100–130  $\mu$  diam., black, globose, verrucose, certain of the surface cells being prolonged into sub-cylindrical processes about 18  $\mu$  long. Asci not seen. Spores almost black, 3-septate, straight or slightly curved, somewhat constricted at the septa and tapering towards the rounded ends, 40–50  $\times$  18–25  $\mu$ .

On leaves of tree unknown, near Durban, 14/5/1897, J. Medley Wood (345), (Wood 6457).

On leaves of *Doryadis rhamnoides*, near Durban, 14/5/97, J. Medley Wood (Wood 6454).

On leaves of tree undetermined, 22/7/15, Mayville, Natal, J. Medley Wood (9065).

This specimen, which is labelled *M. sapindacearum* in Medley Wood's collection, is the one referred to under that name in *Hedwigia*, 1899, p. 132, with the following note: "Hab. in foliis arboris ignotae et *Doryadis rhamnoides*, pr. Durban. Obs. Perithecia obsoleta hinc species dubia. Affinis quoque *M. triloba* Wint." The present specimen has both perithecia and spores, and differs widely from *M. sapindacearum* in the 3-septate spores and the absence of mycelial setae.

Wood's numbers are not quoted in the note in *Hedwigia*, but the numbers are given in a letter containing a list of determinations sent by Sydow to Dr. Medley Wood, now in my possession.

*Meliola Podocarpi* Doidge n. sp.

Amphigenous, but mostly epiphyllous, forming thin, black colonies 2–5 mm. diam.; frequently confluent. Hyphae straight or somewhat sinuous, 6–7  $\mu$  thick, sepia or warm sepia (R. XXIX), composed of cells 16–18  $\mu$  long; branches opposite. Capitate hyphopodia alternate, briefly stipitate, 14–16  $\mu$  long; terminal cell globose, 10–12  $\times$  10–11  $\mu$ . Mucronate hyphopodia not seen. Mycelial setae none. Perithecia scattered or in small groups, black, globose, verrucose, 200–250  $\mu$  diam.; when immature there are numerous, slender hyphae radiating from the base of the perithecia, some of them bearing hyphopodia; occasionally a few of these are upright, and become differentiated into slender, pointed setae. Asci 2–4-spored. Spores 3-septate, strongly constricted at the septa, slightly curved and tapering towards the rounded ends, 50–56  $\times$  14–16  $\mu$ ; the two central cells larger than the others, and when the spore is immature, darker in colour.

On leaves of *Podocarpus Thunbergii*, Woodbush, Zoutpansberg Dist., 3/8/11, E. M. Doidge (1748); Knysna, C.P., P. J. Pienaar (2436).

On leaves of *P. elongata*, Fort Cunningham, Toise River, 20/3/15, Forest Officer (8897).

*Meliola speciosa* Doidge n. sp.

Hypophyllous, forming orbicular-irregular spots 1–5 mm. diam. Hyphae branching, occasionally anastomosing, up to 11  $\mu$  thick, Mikado brown (R. XXIX), articulations short, about 18  $\mu$  long. Capitate hyphopodia numerous, alternate, stipitate, basal cell  $7\text{--}11 \times 5\cdot5\text{--}7 \mu$ , narrower at junction with hypha; terminal wall broader than long,  $18\text{--}21\cdot5 \times 21\cdot5\text{--}25 \mu$ , irregular, 2–4-lobed, each lobe being slightly 2-lobed; mucronate hyphopodia very scarce, paler, slender and curved, about  $25 \times 7 \mu$ . Mycelial setae none. Perithecia grouped in the centre of the colony, black, with a false ostiole, almost smooth,  $165\text{--}265 \mu$  diam.; bearing a number of sub-cylindrical, larviform appendages,  $70\text{--}90 \mu$  long, 18  $\mu$  thick at the base, apex curving upward. Ascus 2-spored, evanescent. Spores ellipsoid, 3-septate, scarcely constricted at the septa, hazel brown (R. XIV),  $52\text{--}61 \times 21\cdot5\text{--}25 \mu$ . Conidiophores dark brown, erect, septate, about 150  $\mu$  long; conidia fusoid, 4-septate, pale.

On leaves of *Gymnosporia* sp., Woodbush, Zoutpansberg Dist., 2/8/11, E. M. Doidge (1740).

*Meliola torta* Doidge n. sp.

Amphigenous, forming thin, black colonies 5–10  $\mu$  diam. Hyphae slender, 6–7  $\mu$  thick, Vandyke brown (R. XXVIII), tortuous, anastomosing, cells 25–36  $\mu$  long; branching irregular, usually unilateral. Capitate hyphopodia, distant, slender, tortuous, alternate or unilateral, 32–40  $\mu$  long; basal cell irregular in shape and size, rather long and slender; frequently geniculate; terminal cell  $14\text{--}25 \times 14\text{--}20 \mu$ , variously lobed and contorted, some flattened at apex, others more or less rounded. Mucronate hyphopodia rather numerous, 1-celled, occasionally 2-celled, unilateral, alternate, or opposite, interspersed with capitate hyphopodia, ampulliform, with a rather long, slender neck, 20–36  $\mu$  long. Mycelial setae not numerous, scattered, simple, straight, abruptly geniculate at the base,  $300\text{--}600 \times 10\text{--}11 \mu$  at base, tapering to the acute apex, opaque except near apex. Perithecia few and scattered, black, globular, rugulose,  $160\text{--}250 \mu$  diam. Asci numerous, 8-spored; spores distichous or conglobate, 3-septate, brown, scarcely constricted at septa, clavate, broader at one end than other,  $25\text{--}30 \times 7\text{--}11 \mu$  (at broadest part). The two middle cells are longer than the terminal ones.

On leaves of *Trichocladus crinitus*, Izelini Forest, King William's Town Dist., 8/6/15, Forester Emmett (9064).

There is another *Meliola* associated with this on leaves with 4-septate spores and no setae—but it was badly parasitised and I was unable to determine it.

*Meliola ganglifer* Kalch.

Grevillea ix, p. 34, pl. 138, fig. 49.

Gaillard, Le Genre *Meliola*, p. 40.

Amphigenous; colonies orbicular, often confluent, velvety black, up to 8 mm. diam. Peritheciigerous mycelium at first vinaceous buff (R. XL), becoming much darker with age (auburn R. II); hyphae 7–8  $\mu$  thick, sinuous, cells fairly long, 25–28  $\mu$ . Capitate hyphopodia alternate, rather numerous, stipitate, 28–36  $\mu$  long, straight or incurved; terminal cell varied in form, usually with 3 or 4 tuberculate protuberances. Mucronate hyphopodia paler, ampulliform, gradually attenuated from the base into a fairly long neck, 18–21  $\times$  8–9  $\mu$ ; mycelial setae numerous, black, opaque, except near acute apex, bent almost at right angles just above the slightly swollen base, thick-walled, 200–360  $\times$  8  $\mu$ , straight or more or less flexuous. Perithecia black, globose, verrucose, 150–220  $\mu$  diam. Ascus ovoid, briefly pedicellate, 2–4-spored. Spores cylindrical, 3-septate, auburn (R. II) rounded at the extremities, slightly constricted at the septa, 45–50  $\times$  15–18  $\mu$ .

On living leaves of *Curtisia faginea* Ait. (MacOwan 1349), Woodbush, Zoutpansberg Dist., J. Burt-Davy (134).

On leaves of host undetermined, Kentani, C.P., 7/10/14, A. Pegler (8392), (Pegler No. 1953).

*Meliola peltata* Doidge n. sp.

Amphigenous, forming orbicular, black pilose spots, 3–7 mm. diam., sometimes confluent. Peritheciigerous mycelium forming a pseudoparenchymatous disc with a definite margin, antique brown (R. III). Composed of much branched hyphae, branching flabelliform; cells of the hyphae about 5.5–7  $\times$  11  $\mu$ . Capitate hyphopodia alternate, closely appressed to the hyphae, sub-clavate, stipitate, 39–50  $\mu$  long; terminal cell compressed, usually tuberculate or lobulate, 28–32  $\mu$  long. Mucronate hyphopodia not seen. Mycelial setae numerous, simple, straight, 10–11  $\mu$  thick and up to 850  $\mu$  long, opaque, black, but paler nearer the acute apex. Perithecia not numerous, scattered, black, scabrous but not verrucose. Asci not seen. Spores 3-septate, occasionally 2-septate, constricted at the septa, attenuated towards each of the rounded ends, Vandyke brown (R. XXVIII) 57–68  $\times$  25–32  $\mu$ , the majority about 60  $\times$  29  $\mu$ .

On leaves of *Podocarpus Thunbergii*, Knysna Forest, C.P., 3/6/12, P. J. Pienaar (2436).

*Meliola cladotricha* Lev.

Ann. des Sc. Nat., v, 1846, p. 266.

Gaillard, Le Genre *Meliola*, p. 46.

Amphigenous, forming thick, black velvety spots 2–5 mm. diam., frequently confluent, with a fimbriate margin. Peritheciigerous mycelium

composed of branched hyphae  $6-8\ \mu$  thick with remote articulations, Isabella colour (R. XXX). Capitulate hyphopodia alternate, very rare, stipitate, terminal cell pyriform. Mucronate hyphopodia opposite or unilateral, rarely unicellular, frequently developing 2-3 cells, paler than the mycelium. Mycelial setae opaque at the base, paler at the summit, bifid, each division giving rise to two or three branches with acute apices. There are frequently groups of crystals of calcium oxalate at the tips of the setae. Perithecia globose, black,  $300-400\ \mu$  diam., with granular surface. Asci ovoid with a very short foot, 2-spored. Spores 3-septate constricted at the septae, attenuated towards the ends,  $65-70 \times 18-22\ \mu$ .

On leaves of *Eugenia Zeyheri*, Woodbush, Zoutpansberg Dist., 3/8/11, E. M. Doidge (1759).

*Meliola ditricha* (K. & Cke.) Doidge.

(*Asterina ditricha* K. & Cke., Grevillea, 1880, p. 32.)

Hypophyllous, effuse, forming thin black colonies 2-5 mm. diam. Hyphae radiating, Vandyke brown (R. XXXVII),  $7-10\ \mu$  thick, composed of cells  $18-21\ \mu$  long; branches usually opposite, anastomosing. Capitulate hyphopodia alternate, stipitate  $25-30\ \mu$  long, terminal cell irregular in shape, variously lobed  $18-22 \times 14-22\ \mu$ . Mucronate hyphopodia fairly numerous, on separate short branches or interspersed with the capitulate hyphopodia, opposite or unilateral, slender, lower part not much thicker than the neck,  $21-25 \times 7-8\ \mu$ . Setae none. Perithecia not numerous, grouped in centre of colony, black, globose (not mature). Asci not seen. Spores 4-septate, nearly black, constricted at the septa, rounded at both ends  $54 \times 25\ \mu$ .

Conidiiferous mycelium slender, paler; conidiophores erect,  $70-80\ \mu$  long, conidia fusoid, 3-septate,  $15-18 \times 4-8\ \mu$ .

On leaves of *Celastrus* sp., Inanda, Natal, May, 1876, Medley Wood (Wood No. 3).

*Meliola Hendeloti* Gaill.

Gaillard, Le Genre *Meliola*, p. 49.

Amphigenous, but mostly epiphyllous, forming thin, black, orbicular colonies 2-3 mm. in diam. Hyphae straight or sinuous, slightly constricted at the septa, Brussels brown (R. III),  $8-10\ \mu$  thick, composed of cells  $25-40\ \mu$  long. Capitulate hyphopodia alternate or unilateral,  $16-18\ \mu$  long, bi-cellular, terminal cell globular or compressed  $11-13 \times 9-11\ \mu$ . Mucronate hyphopodia fairly numerous, opposite, usually on short branches not interspersed with capitulate hyphopodia,  $15-18\ \mu$  long, lageniform. Mycelial setae none. Perithecia scattered, black, globose,  $180-220\ \mu$  diam., superficial cells developed into mammillate processes, the top of each process being recurved or bent laterally. Asci 2-spored, subglobose, very briefly pedicellate. Spores  $45-50 \times 18-22\ \mu$ , laterally compressed, 4-septate, cylindrical, rounded at both ends, slightly constricted at the septa.



On leaves of *Nuxia floribunda*, 3/8/11, Woodbush, Zoutpansberg Dist., E. M. Doidge (1776).

Differs from Gaillard's description of *M. Hendeloti* only in presence of mammillate cells on perithecium; Gaillard puts this fungus in group "Perithecia smooth or simply granular," but in his description says "Perithecia rugulose."

*Meliola glabra* Berk. & Curt.

Gaillard, Le Genre *Meliola*, p. 59.

Amphigenous, but most frequently epiphyllous, forming black, crustaceous spots 2-3 mm. diam. Hyphae 7-9  $\mu$  thick, formed of cells 25-30  $\mu$  long, Dresden brown (R. XV). Capitulate hyphopodia alternate or unilateral, shortly stipitate, 18-25  $\mu$  long; terminal cell ovoid, globose, or slightly lobed 11-14.5  $\times$  11  $\mu$ . Mucronate hyphopodia ampulliform, about 14  $\mu$  long, drawn out at the tip into a short, rather thick neck, not very numerous. Mycelial setae none. Perithecia grouped to the number of 8-10 in the centre of the colony, the superficial cells forming in places conical protrusions, rounded at the top, 150-180  $\mu$  diam., with a false ostiole at the summit. Asci ovoid-oblong, 2-4-spored. Spores 4-septate, constricted at the septa, rounded at the ends, 40-45  $\times$  16-18  $\mu$ .

On leaves of *Canthium* sp., Woodbush, Zoutpansberg Dist., 3/8/11, E. M. Doidge (1780).

This fungus differs slightly from the type described by Gaillard, the perithecia being smaller—he describes them as measuring 200-250  $\mu$ . Otherwise the description corresponds with his.

*Meliola Strophanthi* Doidge, n.sp.

Amphigenous, mostly hypophyllous, forming minute, black, sub-crustaceous, orbicular-irregular spots 1-2 mm. diam. Hyphae somewhat sinuous, 6-9  $\mu$  thick, composed of cells about 18  $\mu$  long, Brussels brown (R. III), branching/opposite. Capitulate hyphopodia alternate, briefly stipitate, 20-25  $\mu$  long; terminal cell cylindrical, straight to slightly curved, convex at the apex 16-18  $\times$  7-9  $\mu$ . Mucronate hyphopodia not numerous, ampulliform, about 18  $\mu$  long, with a short neck. Mycelial setae none. Perithecia not numerous, in small groups, globular, black, 215-250  $\mu$  diam.; surface cells convex, rounded, conical. Mature asci not seen. Spores 40-45  $\times$  16-18  $\mu$ , 4-septate, very slightly constricted at the septa, cylindrical, broadly rounded at the ends.

Conidiiferous mycelium interwoven with the peritheciigerous hyphae, paler, hyphae thinner, with numerous dark brown erect conidiophores 180-200  $\mu$  long. Conidia fusiform, 3-septate, 18-32  $\times$  5-9  $\mu$ .

On the leaves of *Strophanthus speciosus*, Woodbush, Zoutpansberg Dist., 3/8/11, E. M. Doidge (1781).

*Meliola Peglerae* Doidge.

Epiphyllous, sub-crustaceous, black, forming black orbicular colonies 1-3 mm. diam. which form larger spots by becoming confluent. Hyphae frequently septate, formed of cells 8-14  $\times$  7-9  $\mu$ , colour Saccardo's umber (R. XXIX). Branches anastomosing. Capitulate hyphopodia numerous, alternate, or unilateral, briefly stipitate, appressed towards the hyphae; basal cell 7  $\times$  4-7  $\mu$ ; terminal cell larger, obovoid, straight or more frequently bent backward at the tip (almost retort-shaped) 14-18  $\times$  7-11  $\mu$ . Mucronate hyphopodia few in number, opposite, ampulliform, 14-22  $\times$  7  $\mu$ . Mycelial setae none. Perithecia crowded together in the centre of the colony, black, 126-233  $\mu$  diam. Superficial cells mammillate. Asci 2-4-spored, evanescent. Spores oblong, rounded at both ends, 4-septate, slightly constricted at the septa, 29-43  $\times$  16-18  $\mu$ .

On leaves of *Anastrabe integerrima*, Kentani, 4/6/12, A. Pegler (2363), (Pegler No. 1883).

On leaves of shrub unknown, Umgeni, near Durban, Natal, 16/7/15, J. Medley Wood (9036).

*Meliola inermis* Kalch. & Cke.

Grevillea 1880, p. 34, tab. 38, fig. 51.

Sacc. Syll. Fung. i, p. 64.

Gaillard, Le Genre *Meliola*, p. 64.

(*M. quinquespora* Thuem., Myc. Univ. n. 657—*M. quinquesepata* Rehm. Ascom.)

Amphigenous, but mostly epiphyllous; forming small, black, thinly carbonaceous colonies 1-3 mm. in diam., sometimes very numerous and then confluent. Hyphae 7-8  $\mu$  thick, composed of cells 18-22  $\mu$  long, sinuous, tawny olive (R. XXIX). Capitulate hyphopodia alternate, about 25  $\mu$  long. stipitate; terminal cell rounded, truncate or somewhat lobed, averaging 14-16  $\times$  10-11  $\mu$ . Mucronate hyphopodia not so numerous, opposite, only slightly paler, 14-18  $\mu$  long, ampulliform, with a short neck. Setae none. Perithecia scattered, black, globular, 200-250  $\mu$  diam., the surface being covered with conical or horn-shaped unicellular processes, 60  $\times$  15  $\mu$ . Asci ovoid briefly pedicellate, 2-spored. Spores 4-septate, constricted at the septa, elliptical, rounded at the extremities, similar in colour to the mycelium, 35-38  $\times$  13-15  $\mu$ .

On leaves of *Buddleia auriculata*, Boschberg nr. Somerset East, C.P., July, 1876, MacOwan (MacOwan 1251), (de Thüm Myc. Univ. 657) Bulwer, Natal, April, 1914, W. Haygarth (7790).

On leaves of *Buddleia salvifolia*, Woodbush, Zoutpansberg, 2/8/11, E. M. Doidge (1742).

On leaves of *Buddleia pulchella*, Amanzimtoti, Natal, 10/7/11, E. M. Doidge (1571).

*Meliola Bosciae* Doidge n. sp.

Epiphyllous, rarely hypophyllous; forming a thin, black, sub-orbicular pellicle 2-3 mm. wide on the leaf surface. Hyphae radiating, frequently anastomosing in the neighbourhood of the perithecia, tawny olive (R. XXIX), septa at times curved, vermiculate,  $5.5-9\mu$  thick; branches opposite or unilateral. Capitulate hyphopodia alternate or unilateral, rarely opposite, shortly stipitate,  $14-20\mu$  long; terminal cell  $10.5-16\mu$  long, scabrous, convex, truncate or slightly lobed. Mucronate hyphopodia most numerous in the neighbourhood of the perithecia, on separate branches or scattered amongst the capitulate hyphopodia, opposite or unilateral  $14-18\mu$  long and about  $7\mu$  thick at the base, ampulliform, with a long neck which is frequently incurved. Mycelial setae none. Perithecia globose, black, verrucose,  $160-180\mu$  diam., with 6-12 setae scattered on the surface. Setae simple,  $70-90\mu$  long, opaque, and about  $6\mu$  thick at the slightly bulbous base, and tapering to the obtuse pellucid apex, straight, or abruptly bent just behind the apex. Ascus 2-3-spored, ovate, shortly pedicellate, evanescent. Spores sepia colour (R. XXIX) 4-septate, constricted at the septa, rounded at both ends,  $39-47 \times 10.5-14.5\mu$ .

On leaves of *Boscia caffra*, Winkle Spruit, Natal, 6/7/12, E. M. Doidge (2510); Stella Bush, Durban, 7/6/15, K. Lansdell (9016).

On leaves of *Maerua pedunculosa*, Umgeni, Natal, 16/7/15, J. Medley Wood (9024).

*Meliola capensis* (K. & Cke.) Theiss.

Ann. Mycologici x (1912), p. 19.

(*Asterina capensis* Kalch. & Cke., Grevillea ix, p. 32.)

Epiphyllous, sometimes hypophyllous, forming round black colonies about 2-4 mm. broad, often confluent. Hyphae straight, radiating, branched, up to  $8\mu$  thick, frequently septate, colour Saccardo's umber (R. XXIX). Branches widely divaricating. Capitulate hyphopodia opposite, numerous,  $10.5-15\mu$  long, widely divaricating, regular; terminal cell  $9-10 \times 7-8\mu$ , basal cell about  $3.5 \times 6-7\mu$ . Mucronate hyphopodia opposite, numerous,  $14-18\mu$  long. Mycelial setae straight, simple, opaque,  $300-400 \times 5-10\mu$ , pellucid near the acute apex. Perithecia gregarious, black, globose, verrucose,  $100-200\mu$  diam. Asci 2-spored, evanescent. Spores oblong, rounded at both ends, 4-septate, slightly constricted at the septa,  $35-40 \times 14-16\mu$ .

On leaves of *Hippobromus alatus*, Inanda, Natal, J. Medley Wood (Wood No. 57); Somerset East (MacOwan No. 1328); Winkle Spruit, 6/7/12, E. M. Doidge (2499); Verulam, 3/7/13, I. B. Pole Evans (6805); Umgeni, Natal, 16/7/15, J. Medley Wood (9034).

On leaves of *Hippobromus* sp., Kentani, 7/10/14, A. Pegler (8391). (Pegler No. 1956).

*Meliola Toddaliae* Doidge n. sp.

Amphigenous, forming black, circular, velvety spots 2–3 mm. diam., very easily detached from the leaf. Hyphae fuscous (R. XLVI), much branched, 7–10  $\mu$  thick, composed of cells 10–18  $\mu$  long; branches usually opposite, less frequently unilateral, anastomosing, very pale near the tips. Capitate hyphopodia numerous, opposite, 18–20  $\mu$  long, stipitate; terminal cell usually sub-ovate and slightly in- or recurved, but often becoming flattened in various directions by compression, 14–16  $\times$  8–10  $\mu$ . Mucronate hyphopodia not numerous, opposite, ampulliform, with a straight or curved neck, 18–20  $\times$  8–10  $\mu$ . Mycelial setae numerous, simple, straight, erect, at first translucent then becoming opaque almost to the acuminate apex, more or less torulose, 300–350  $\times$  8–10  $\mu$ . Perithecia rather numerous, scattered, hidden among the setae, black, globose, verrucose, 200–250  $\mu$  diam. Asci 3–4-spored. Spores 4-septate, slightly constricted, cylindrical, rounded at both ends, thick-walled, laterally compressed, 47–55  $\times$  18–21  $\times$  14  $\mu$ .

On leaves of *Toddalia lanceolata*, Kentani, 16/12/14, A. Pegler (8788), (Pegler No. 1960 A.); Henley, near Pietermaritzburg, Natal, 24/5/15, E. M. Doidge (8999).

*Meliola microspora* Pat. et Gaill.

Bull. Soc. Myc. 1888, p. 104.

Sacc. Syll. Supplem. Univ. i, p. 426.

Gaillard, Le Genre *Meliola*, p. 75.

var. *Africana* var. nov.

Amphigenous, forming very minute black colonies  $\frac{1}{2}$ –1 mm. in diam. Hyphae slender, radiating, Isabella colour (R. XXX) 5–8  $\mu$  thick, composed of cells 20–35  $\mu$  long. Capitate hyphopodia distant, alternate or unilateral, stipitate, widening gradually from the base to just below the convex or rather pointed apex, 20–21.5  $\times$  7–8  $\mu$ , terminal cell ovate, 14–16  $\mu$  long. Mucronate hyphopodia opposite, interspersed with the capitate hyphopodia, ampulliform, with a neck 5–7  $\mu$  long. Mycelial setae not numerous, more numerous in the neighbourhood of the perithecia, simple, somewhat abruptly geniculate near the base or incurved, 230–320  $\mu$   $\times$  6–7  $\mu$ , very dark at the base, rather paler near the apex. Perithecia few, black, verrucose or rugulose, globular, 150–180  $\mu$  diam. Asci ovate, briefly pedicellate, 3–4 spored. Spores 4-septate, cylindrical, broadly rounded at both ends, slightly constricted at the septa, 26–32.5  $\times$  10.5–14  $\mu$ , frequently wider at one end than the other.

On leaves of *Galopina circaeoides*, Woodbush, Zoutpansberg Dist., 3/8/11, E. M. Doidge (1760).

On leaves of *Labiatae*, undetermined, Woodbush, Zoutpansberg Dist., 4/8/11, E. M. Doidge (1766).

On leaves of *Barleria* sp., Amanzimtoti, Natal, 20/5/13, E. M. Doidge (6623).

On leaves of *Isoglossa Woodii*, Amanzimtoti, Natal, 10/7/11, E. M. Doidge (1578).

Differs from type in size of spores and hyphopodia. Gaillard gives capitate hyphopodia  $12-15 \times 6-8 \mu$ . Spores  $25-28 \times 8-10 \mu$ . Asci 2-spored.

*Meliola amphitricha*, Fr.

Bull. Soc. Myc. 1888, p. 104.

Gaillard, Le Genre *Meliola*, p. 76.

Amphigenous, spots at first orbicular then confluent and irregular, velvety. Hyphae Dresden brown (R. XV),  $8-10 \mu$  thick, formed of rather short cells. Capitate hyphopodia usually alternate,  $20-30 \mu$  long, stipitate, terminal cell sub-cylindrical, or increasing in thickness from the base upwards, the apex truncate or convex, up to  $15-20 \mu$  long. Mucronate hyphopodia pale, opposite or unilateral, drawn out at the apex into a neck. Mycelial setae numerous, remotely septate, distributed over the surface of the spot,  $300-400 \times 10-15 \mu$ , of an opaque, violaceous black at the base, somewhat obtuse at the summit which is paler and translucent. Perithecia globular, black, verrucose, each exterior cell being strongly convex, usually scattered, no false ostiole present,  $120-200 \mu$  diam. Asci ovoid, very briefly pedicellate, 2-spored. Spores 4-septate, constricted at the septa, elliptical, rounded at the ends,  $40-50 \times 18-22 \mu$ .

On leaves of *Sapindus oblongifolius*, Stella Bush, Durban, 11/7/11 and 2/7/12, E. M. Doidge (1572 and 2520); M. Franks, 2/7/12 (8404).

On leaves of *Psychotria capensis*, Amanzimtoti, Natal, 10/7/11, E. M. Doidge (1272); Stella Bush, Durban, E. M. Doidge (2521).

On leaves of *Gardenia globosa*, Kentani, 1/4/12, A. Pegler (2214), (Pegler No. 1858); Winkle Spruit, Natal, 28/5/15, E. M. Doidge (9014).

On leaves of *Grumilea globosa*, Kentani, 29/5/12, A. Pegler (2366), (Pegler No. 1875).

On leaves of *Olea laurifolia*, Woodbush, Zoutpansberg Dist., 4/8/11, E. M. Doidge (1835).

On leaves of *Olea Pegleri*, Kentani, 29/8/14, A. Pegler (8382), (Pegler No. 1948).

On leaves of shrub unknown, Krantzkloof, Natal, 14/8/14, P. van der Bijl (8377).

On leaves of *Mitriostigma axillaris*, Winkle Spruit, Natal, 28/5/15, E. M. Doidge (9013).

*Meliola Rhois* P. Henn.

Fungi Brasilienses, Engl. Jahrb. xvii, p. 523.

Amphigenous, forming small, black, velvety spots 1-3 mm. diam.; these are frequently confluent and cover a great part of leaf surface. Hyphae

radiating, frequently septate,  $7-11\ \mu$  thick, usually constricted at the septa, buffy citrine (R. XVI); branching alternate; cells of the hyphae  $17-27\ \mu$  long. Capitate hyphopodia alternate, stipitate,  $18-25\ \mu$  long, terminal cell varied in form, straight or bent and usually sub-lobed (or with rounded protrusions)  $14-18 \times 10-11\ \mu$ . Mucronate hyphopodia fairly numerous, on separate branches, opposite, ampulliform, with a thin neck,  $18-22 \times 8-10\ \mu$ . Mycelial setae rather numerous, scattered, erect, rigid, simple, straight, opaque at the base, more pellucid near the acute apex  $280-400 \times 7-9\ \mu$ . Perithecia scattered or in groups, black, globose, granular or slightly verrucose,  $180-230\ \mu$  diam. Ascus elliptical-ovate with a very short foot, 2-4-spored. Spores 4-septate; cylindrical, slightly constricted at the septae, rounded at both ends, laterally compressed  $35-47 \times 15-20 \times 14\ \mu$ .

On leaves of *Rhus longispina*, Despatch, near Uitenhage, 24/3/11, E. M. Doidge (1239).

On leaves of *Rhus crenata*, Verulam, 3/7/13, I. B. Pole Evans (6804).

On leaves of *Rhus* sp., Mayville, near Durban, Natal, 22/7/15, J. Medley Wood (9032).

On leaves of *Harpophyllum caffrum*, Kentani, 17/2/15, A. Pegler (8851), (Pegler No. 1986).

Var. *tenuis*.—Hyphae more slender with distant articulations, capitate hyphopodia more frequently smooth.

On leaves of *Rhus* sp., Stella Bush, Durban, 2/7/12, E. M. Doidge (2519).

In his description Hennings does not mention the presence of mycelial setae; but as the remainder of the description agrees exactly with the South African specimens I have assigned them to this species.

*Meliola microthecia* Thum.

Flora, 1876, p. 569.

Sacc. Syll. Fung. i, p. 68.

Gaillard, Le Genre *Meliola*, p. 73.

Amphigenous, forming very small, thin, black colonies  $\frac{1}{2}-1\frac{1}{2}$  mm. diam., these frequently becoming confluent and forming larger spots. Hyphae radiating, sinuous  $7-8\ \mu$  thick, branching freely, frequently constricted at the septa, snuff-brown (R. XXIX) formed of cells  $18-25\ \mu$  long; branches usually alternate, frequently anastomosing. Capitate hyphopodia numerous, alternate, stipitate,  $21-32\ \mu$  long; terminal cell  $14-21 \times 10-18\ \mu$ , at first ovoid then lobed, frequently becoming triangular with truncated angles. Mucronate hyphopodia opposite or unilateral, on separate branches, inflated in the middle and drawn out into a short neck  $12-18 \times 10\ \mu$ . Mycelial setae very few in number (4-6 to each colony), in the neighbourhood of the perithecia, straight, cylindrical,  $200-350 \times 8-10\ \mu$ , translucent throughout and frequently septate, Vandyke brown (R. XXVIII) at the base, paler towards



the apex, which is rounded or ends in a broad angle. Perithecia very few in the centre of the spot, sometimes only one, black, globose, verrucose, 200–230  $\mu$  diam. Asci 3–4 spored, ovate, shortly pedicellate. Spores 4-septate, Vandyke brown, slightly constricted at the septa, oblong, broadly rounded at both ends, 48–54  $\times$  18–22  $\mu$ .

On leaves of *Barosma scoparia*, Grahamstown, July, 1876, P. MacOwan (MacOwan 1260, de Thüm. Myc. Univers. 851).

On leaves of shrub undetermined, Paddock, Natal, 23/12/13, P. van der Bijl (8376).

*Meliola sinuosa* Doidge n. sp.

Amphigenous, mostly hypophyllous, forming black velvety colonies 1–5 mm. diam. Hyphae very sinuous, with opposite or unilateral branches which frequently anastomose, very variable in thickness and sometimes constricted at the septa, 5–11  $\mu$  thick, composed of cells 18–44  $\mu$  long Isabella colour (R. XXX). Capitulate hyphopodia alternate or unilateral, 18–25  $\times$  12–15  $\mu$ , stipitate; terminal cell 14–15  $\mu$  long, of various form, sub-cylindrical, curved or slightly lobed, apex truncate or convex; basal cell varying in length, usually short. Mucronate hyphopodia rare, 14–15  $\times$  10–16  $\mu$ , the basal part almost hemispherical, narrowing suddenly into a slender neck which may be straight or curved, 7–8  $\times$  2–2.5  $\mu$ . Mycelial setae numerous, scattered over the colony, simple, straight, 250–350  $\times$  8–10  $\mu$ , opaque right up to the acute apex. Perithecia scattered, black, globose, 160–220  $\mu$  diam. Ascus elliptical-ovate, briefly pedicellate, 2-spored. Spores 4-septate, the middle cell being larger than the rest, cylindrical, rounded at both ends, slightly constricted at the septa, 50–55  $\times$  15–18  $\mu$ .

On leaves of *Trichilia emetica*, Lemana, Spelonken, Zoutpansberg Dist., 14/8/11, E. M. Doidge (1783).

On leaves of *Trichilia* sp., Kentani, 16/12/14, A. Pegler (8786), (Pegler No. 1971).

On leaves of shrub undetermined, Springfield, Natal, 16/7/15, J. Medley Wood (9035).

*M. deciduae* affinis.

*Meliola polytricha* K. & Cke.

Grevillea, 1880, p. 72.

Sacc. Syll. Fung. i, p. 67.

Gaillard, Le Genre *Meliola*, p. 92.

Hypophyllous or amphigenous, forming black colonies 2–3 mm. diam. Hyphae radiating, much-branched, chestnut brown (R. XIV), 8–10  $\mu$  thick, composed of cells 18–22  $\mu$  long; branches opposite or alternate, numerous. Capitulate hyphopodia alternate, stipitate, 20–25  $\mu$  long; terminal cell broadly ovate, globulose or compressed, 14–16  $\times$  12–14  $\mu$ . Mucronate hyphopodia

fairly numerous usually on special short branches, opposite, ampulliform, tapering rather gradually to the neck, about  $18 \times 7 \mu$ . Mycelial setae numerous, simple, more or less flexuose, opaque right to the acute tip,  $250-300 \times 9-10 \mu$ . Perithecia numerous, scattered,  $160-200 \mu$  diam., black, globose, very minutely verrucose. Asci not seen. Spores 4-septate, cylindrical, rounded at both ends,  $45-55 \times 16-18 \mu$ . Conidiiferous mycelium paler and more slender, conidia borne on upright flexuose conidiophores, clavate, 3-5-septate,  $50-70 \times 6-10 \mu$ .

On leaves of shrub unknown, Inanda, J. Medley Wood (Wood 222).

On leaves of *Osyris compressa* near Grahamstown, 1876, P. MacOwan (MacOwan, No. 1256).

On leaves of *Pittosporum viridiflorum*, Claridge, Natal, 31/5/15, E. M. Doidge (8996).

This description, taken from Wood's duplicate of the type specimen, differs in many essentials from that given by Gaillard (*Le Genre Meliola*, p. 92).

MacOwan (No. 1262) on leaves of *Cunonia capensis* approximates this species, but the specimens examined are parasitised by *Dimerium intermedium* Syd., and no *Meliola perithecia* were seen.

*Meliola rigida* Doidge n. sp.

Amphigenous, forming rusty black colonies of varying size, sometimes, especially in the conidial stage, up to 1 cm. diam. Hyphae rigid,  $7-8 \mu$  thick, sepia-warm sepia (R. XXIX), composed of cells  $18-25 \mu$  long, branches usually opposite, hyphopodia very briefly stipitate,  $14-18 \mu$  long, terminal cell globose or broadly ovate, sometimes slightly curved,  $10-12 \times 8-10 \mu$ . Mucronate hyphopodia not very numerous, paler, opposite, narrowed above into a short neck, about  $18 \mu$  long. Mycelial setae not very numerous, black, opaque almost to the acute apex, more or less flexuose,  $250-600 \mu$  long by  $10-11 \mu$ . Perithecia scattered, black, globose, verrucose,  $180-220 \mu$  diam. Ascus ovate, briefly stipitate, 3-spored. Spores 4-septate, slightly constricted, oblong, compressed, rounded at both ends,  $40-45 \times 16-20 \mu$ .

On leaves of *Xymalos monospora*, Woodbush, Zoutpansberg Dist., 3/8/11, E. M. Doidge (1775). Tabankulu, Transkei, 15/3/15, G. Fraser (8890). Buccleuch, Natal, 18/3/15, I. B. Pole Evans (8894).

*Meliola falcata* Syd.

Annales Mycologici, vol. x, no. 1, 1912.

Amphigenous, but most frequently epiphyllous, forming velvety black orbicular colonies 2-4 mm. broad, often confluent, and then irregular in outline. Hyphae snuff-brown (R. XXIX), anastomosing,  $6-7 \mu$  thick; capitate hyphopodia alternate,  $22-25 \mu$  long, apical cell up to  $10 \mu$  broad; mucronate hyphopodia opposite,  $15-18 \mu$  long. Mycelial setae very numerous, simple,

curved, often falcate, opaque,  $175-250 \times 6-9 \mu$ , apex acute. Perithecia hidden among the numerous mycelial setae, globose, verrucose, black,  $200-230 \mu$  diam., asci 2-4-spored; spores oblong, rounded at both ends, 4-septate, constricted, similar in colour to the hyphae,  $38-48 \times 16-20 \mu$ .

On leaves of *Plectronia ventosa*, Amanzimtoti, Natal, 10/7/11, E. M. Doidge (1577); Durban Beach, 2/7/11, I. B. Pole Evans (1591).

On leaves of *Pavetta* sp., Tongaat, Natal, 12/9/13, P. van der Bijl (6952). On leaves of *Plectronia* sp. (?), Winkle Spruit, Natal, 28/5/15, E. M. Doidge (9005); Springfield, Natal, 14/7/15, J. Medley Wood (9017).

On leaves of shrub undetermined, Mayville, Natal, 22/7/15, J. Medley Wood (9030).

*Meliola arcuata* Doidge.

Forms small, velvety, irregular-orbicular colonies 1-2 mm. diam. Hyphae branched, sinuate, frequently septate, Vandyke brown (R. XXVIII), about  $10.5-11 \mu$  thick, finally anastomosing. Capitate hyphopodia alternate, shortly stipitate,  $20-29 \times 10.5-11 \mu$ ; terminal cell irregularly ovoid, dentate or lobulate. Mucronate hyphopodia scarce, opposite,  $14-18 \times 7-9.5 \mu$ . Mycelial setae numerous, simple, arcuate or sometimes almost straight, black, opaque, apex acute, of uneven thickness,  $7-11 \mu$  thick,  $295-330 \mu$  long. Perithecia hidden among the mycelial setae, black, granular,  $115-150 \mu$  diam. Asci 2-spored, evanescent. Spores ellipsoid-oblong, rounded at both ends, 4-septate, slightly constricted at the septa,  $50-54 \times 14-16 \mu$ .

On stems of *Viscum* sp., Kentani, 1/6/12 (2364), 4/8/14 (8389), (Pegler No. 1949).

*Meliola Woodiana* Sacc. & Syd.

Hedwigia, 1899, p. 132.

Sacc. Syll. Fung. ix, p. 415.

Hypophyllous, forming black, velvety sub-orbicular spots up to 4 mm. diam., frequently confluent. Peritheciigerous mycelium radiating, branched, composed of hyphae,  $8-9 \mu$  thick, Natal brown (R. XL), septate; cells  $18-25 \mu$  long; branches not numerous, opposite. Capitate hyphopodia alternate, stipitate,  $25-35 \mu$  long, terminal cell ovate or slightly angular  $18-25 \times 7-11 \mu$ . Mucronate hyphopodia on separate short branches, not numerous, opposite, paler, with a short, rather thick neck,  $11-18 \mu$  long. mycelial setae most numerous near perithecia, simple, black, rigid, arcuate, tapering slightly to blunt, translucent apex,  $300-400 \times 9-11 \mu$ . Perithecia black, globose, granulose, ca.  $200 \mu$  diam. Asci 2-3-spored. Spores oblong, obtuse at both ends, 4-septate, constricted  $47-54 \times 18 \mu$ . Conidiiferous mycelium filiform, conidiophores sub-simple, ascending, black-fuliginous, above paler and nodulose,  $300-350 \times 7-8 \mu$ . Conidia obclavate, 4-septate,  $52-55 \times 9-11 \mu$ , pale fuliginous.

On sub-coriaceous leaves of an unknown tree, Durban, Natal, J. Medley Wood (Wood 5467).

*Meliola furcillata* Doidge n. sp.

Amphigenous, forming thin black spots 2–3 mm. diam. Hyphae straight or sinuous, tawny olive (R. XXIV), 6–8  $\mu$  thick, with opposite or unilateral branches, cells mostly about 18–21  $\mu$  long. Capitate hyphopodia alternate or unilateral, briefly stipitate 18–21·5  $\mu$  long; terminal cell ovoid, straight, incurved or recurved 10·5–12·5  $\times$  7–9  $\mu$ . Mucronate hyphopodia numerous, interspersed among the capitate hyphopodia, not on separate branches, 14–18  $\mu$  long, ampulliform, with a rather long neck which is frequently curved. Mycelial setae more numerous in the neighbourhood of the perithecia, 330–400  $\times$  7  $\mu$ , once or twice abruptly geniculate near the base, otherwise straight, more or less torulose, opaque at the base, more translucent and with a slight constriction below the apex, which terminates in a single mucronate point or is bi- or tridentate. Perithecia scattered or in small groups, black, globose, verrucose, 160–180  $\mu$  diam. Asci 2-spored. Spores 4-septate, cylindrical, broadly rounded at both ends, constricted at the septa, 43–45  $\times$  16–18  $\mu$ .

On leaves of *Maesa rufescens*, Amanzimtoti, Natal, 10/7/11, E. M. Doidge (1573).

*Meliola varia* Doidge n. sp.

Amphigenous, forming small, black colonies 1–2 mm. diam. Hyphae sinuate, and irregular in thickness, 7–9  $\mu$ , argus brown (R. III) cells 18–25  $\mu$  long, branching irregular, usually alternate or unilateral. Capitate hyphopodia remote, not numerous, alternate or unilateral 21–25  $\mu$  long, terminal cell globular-ovoid, 14–16·5  $\times$  10·5–12  $\mu$ . Mucronate hyphopodia very rare, paler, slender, tapering about 11  $\times$  5–6  $\mu$ . Mycelial setae very numerous, 180–220  $\mu$  long, lower part opaque 160–190  $\times$  10  $\mu$ , above more translucent and branching in various ways, some dividing at once into 3 short branches about 18  $\mu$  long, others producing 2 thick, spreading branches 18–30  $\times$  8  $\mu$ , each of these dividing into 2–3 smaller branches. Ultimate branches all bi- to trifid. Perithecia scattered, black, globose, collapsing slightly after drying, verrucose, 160–180  $\mu$  diam. Asci not seen. Spores 4-septate, scarcely constricted at the septa, cylindrical, rounded at the ends 45–50  $\times$  16–18  $\mu$ , middle cell sometimes larger than the rest.

On leaves of *Cissus rhomboidea*, Winter's Kloof, Natal, 26/6/11, E. M. Doidge (1639).

*Meliola bifida* Cke.

Grevillea 1880, p. 15.

Sacc. Syll. Fung. i, p. 62.

Gaillard, Le Genre *Meliola*, p. 99.

Forms conspicuous, black, velvety spots, chiefly on stems. Mycelium snuff-brown (R. XXX), much branched. Hyphae  $7-8\mu$  thick, frequently septate, cells  $15-18\mu$  long, branches opposite. Capitate hyphopodia very numerous, crowded, mostly opposite,  $15-18\mu$  long; terminal cell sub-cylindrical to ovate, convex, frequently compressed,  $11-14 \times 7-8\mu$ . Mucronate hyphopodia not seen. Mycelial setae very numerous, erect,  $250-325\mu$  long,  $10\mu$  thick at the base; bifid near apex, branches  $10-90\mu$  long,  $6-7.5\mu$  thick, simple or bifid, apices acute; in many cases ultimate branches also bifid or trifid. Perithecia numerous, completely concealed among the setae, black, globose, verrucose,  $250-300\mu$  diam. Asci 2-3-spored. Spores brown, 4-septate, cylindrical, rounded at both ends, slightly constricted at the septa,  $42-50 \times 14-16\mu$ .

On stems and leaves of *Osyridicarpus natalensis*, Inanda, Natal, J. Medley Wood; Springfield, Natal, 14/7/15, J. Medley Wood (9020).

*Meliola leptidea* Syd.

Annales Mycologici, vol. x, no. 1, 1912.

Epiphyllous, forming velvety black colonies 2-4 mm. diam., frequently confluent. Hyphae branched, chestnut brown (R. XIV)  $8-11\mu$  thick; capitate hyphopodia very numerous, closely crowded, opposite or alternate,  $18-28\mu$  long, terminal cell ovate or globular, obtuse,  $10-15\mu$  thick; mucronate hyphopodia not so numerous, up to  $25\mu$  long. Perithecia congregated in the centre of the colony, but not crowded together, black, globose, collapsing somewhat when dry, asperulous,  $250-300\mu$  diam. Mycelial setae very numerous,  $200-300\mu$  long,  $8-11\mu$  thick, opaque at the base, dividing above into two long (up to  $130\mu$ ) spreading, slightly incurved branches, these branches being again divided into two branches of various length ( $30-80\mu$ ), bifurcate at the apex. Asci ovate  $50-60 \times 28-40\mu$ , 2-3-spored; spores oblong, broadly rounded at both ends, 4-septate, constricted at the septa, chestnut brown,  $45-55 \times 15-20\mu$ .

On leaves of *Cussonia* sp., Woodbush, Zoutpansberg Dist., 27/7/07, C. E. Legat (405).

On leaves of *Cussonia umbellifera*, Woodbush, Zoutpansberg Dist., 3/8/11, E. M. Doidge (1774).

*Species Excludendae.*

|                                      |   |                                             |
|--------------------------------------|---|---------------------------------------------|
| <i>Meliola capnodioides</i> Thuem.   | = | <i>Meliola amphitricha</i> , Fr.            |
| <i>Meliola Psilostomae</i> Thuem.    | = | <i>Dimerium Psilostomatis</i> (Thuem.) Sae. |
| <i>Meliola quinquiespora</i> Thuem.  | = | <i>Meliola inermis</i> K. & Cke.            |
| <i>Meliola MacOwaniana</i> Thuem.    | = | <i>Dimerium MacOwanianum</i> (Thuem.).      |
| <i>Meliola Sclerochitonis</i> Kalch. | = | <i>Asterina fimbriata</i> K. & Cke.         |

CAPNODIUM.

Mycelium superficial, crustaceous, formed of short, thick-walled cells.

Perithecia superficial, globose to pyriform, membranaceous or carbonaceous. Asci ovate to clavate, 8-spored. Spores brown, muriform. Conidia very various, and produced in great numbers.

A large number of fungi have been collected in South Africa on various hosts probably belonging to this genus, but as no perithecia have yet been found on any of these it is impossible to diagnose them accurately. A list of the hosts is appended:

*Capnodium* spp.

On leaves and stems of *Citrus* spp. Lemana, Zoutpansberg Dist., 20/8/08 (504), 14/8/11, E. M. Doidge (1790).

On leaves of *Pyrus malus*, March, 1906, C.P. (39).

On *Asparagus plumosus*, Table Mt., Natal, 18/5/11, C. Fuller (1676); Kentani, C.P., 4/3/12, A. Pegler (8886).

On leaves of *Grewia occidentalis*, Kentani, 1/6/12, A. Pegler (2365).

On leaves of *Celastrus* sp., Butterworth, 19/3/12, A. Pegler (2188).

On leaves of *Royena* sp., Kentani, 4/3/12, A. Pegler (2192).

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| Host.                 |   |   | Fungus.                            |
| Anastrabe integerrima | . | . | Meliola Peglerae.                  |
| Apodytes dimidiata    | . | . | Phaeodimeriella capensis.          |
| Barleria sp.          | . | . | Meliola microspora, var. africana. |
| Barosma scoparia      | . | . | Meliola microthecia.               |
| Boscia caffra         | . | . | Meliola Bosciae.                   |
| Buddleia auriculata   | . | . | Meliola inermis.                   |
| Buddleia pulchella    | . | . | Meliola inermis.                   |
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| Canthium sp.          | . | . | Meliola glabra.                    |
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| Celastrus sp.         | . | . | Meliola ditricha.                  |
| Cissus rhomboidea     | . | . | Meliola varia.                     |
| Curtisea faginea      | . | . | Meliola gangliferia.               |
| Cussonia umbellifera  | . | . | Meliola leptidea.                  |
| Cussonia sp.          | . | . | Meliola leptidea.                  |
| Dovyalis rhamnoides   | . | . | Meliola conferta.                  |
| Eriosema sp.          | . | . | Parodiella perisporioides.         |
| Eugenia Zeyheri       | . | . | { Meliola cladotricha.             |
|                       |   |   | { Zukalia transvaalensis.          |
| Galopina circaeoides  | . | . | Meliola microspora, var. africana. |
| Gardenia globosa      | . | . | Meliola amphitricha.               |
| Grumilea globosa      | . | . | Meliola amphitricha.               |
| Gymnosporia spp.      | . | . | { Dimeriella annulata.             |
|                       |   |   | { Dimerium Gymnosporiae.           |
|                       |   |   | Meliola speciosa.                  |



| <i>Host.</i>                         | <i>Fungus.</i>                                   |
|--------------------------------------|--------------------------------------------------|
| Hippobromus alatus . . . .           | Meliola capensis.                                |
| Indigofera sp. . . . .               | Parodiella perisporioides.                       |
| Isoglossa Woodii . . . . .           | Meliola microspora, var. africana.               |
| Limnanthemum Thunbergianum . . . . . | Parodiella congregata.                           |
| Maerua pedunculosa . . . . .         | Meliola Bosciae.                                 |
| Maesa rufescens . . . . .            | Meliola furcillata.                              |
| Meliola Rhois . . . . .              | Dimerium intermedium.                            |
| Meliola sp. . . . .                  | Dimerium intermedium.                            |
| Mitriostigma axillaris . . . . .     | Meliola amphitricha.                             |
| Nuxia floribunda . . . . .           | Meliola Hendeloti.                               |
| Nuxia tomentosa . . . . .            | Meliola Hendeloti.                               |
| Olea laurifolia . . . . .            | Meliola amphitricha.                             |
| Olea Pegleri . . . . .               | Meliola amphitricha.                             |
| Osyridicarpus natalensis . . . . .   | Meliola bifida.                                  |
| Osyris compressa . . . . .           | { Meliola polytricha.<br>Dimerosporium osyridis. |
| Pavetta Bowkeri . . . . .            | Balladyna velutina.                              |
| Pavetta natalensis . . . . .         | Balladyna velutina.                              |
| Pavetta obovata . . . . .            | { Balladyna velutina.<br>Meliola falcata.        |
| Pittosporum viridiflorum . . . . .   | Meliola polytricha.                              |
| Plectronia ciliata . . . . .         | Dimerium Psilostomatis.                          |
| Plectronia Guenzii . . . . .         | Dimerium Psilostomatis.                          |
| Plectronia ventosa . . . . .         | Meliola falcata.                                 |
| Podocarpus elongata . . . . .        | Meliola Podocarpi.                               |
| Podocarpus Thunbergii . . . . .      | { Meliola peltata.<br>Meliola Podocarpi.         |
| Psoralea decumbens . . . . .         | Parodiella perisporioides.                       |
| Psychotria capensis . . . . .        | Meliola amphitricha.                             |
| Pygeum africanum . . . . .           | Meliola manca.                                   |
| Rubus rigidus . . . . .              | Meliola manca.                                   |
| Rhus crenata . . . . .               | Meliola Rhois.                                   |
| Rhus longispina . . . . .            | Meliola Rhois.                                   |
| Rhynchosia sp. . . . .               | Parodiella Schimperii.                           |
| Sapindus oblongifolius . . . . .     | Meliola amphitricha.                             |
| Strophanthus speciosus . . . . .     | Meliola Strophanthi.                             |
| Toddalia lanceolata . . . . .        | Meliola Toddaliae.                               |
| Tricalysia floribunda . . . . .      | Balladyna velutina.                              |
| Tricalysia lanceolata . . . . .      | Balladyna velutina.                              |
| Trichilia emetica . . . . .          | Meliola sinuosa.                                 |
| Trichocladus crinitus . . . . .      | Meliola torta.                                   |
| Vernonia angulifolia . . . . .       | Dimeriella claviseta.                            |

| Host.                        | Fungus.                    |
|------------------------------|----------------------------|
| Vigna angustifolia . . . . . | Parodiella perisporioides. |
| Viscum, sp. . . . .          | Meliola arcuata.           |
| Xymalos monospora . . . . .  | Meliola rigida.            |

## DESCRIPTIONS OF NEW SPECIES.

*Dimeriella claviveta* Doidge n. sp.

Epiphylla, maculas effusas efformans; mycelio ex hyphis flexuosis, septatis, fusciculis, 3-3.5  $\mu$  crassis composito; peritheciis superficialibus, sparsis v. laxe gregariis, sub-hemisphaericis, atris, carbonaceis, 90-115  $\mu$  diam., praecipue basi v. in parte inferiore 9-15 setulis obsitis; setulis septatis clavatis, 15-55  $\mu$  long, basi 3.5-7  $\mu$  crassis, ad apicem incrassatis, truncatis, diverse lobatis; ascis numerosis, paraphysatis, 8-sporis, sessilibus, cylindraceo-clavatis, apice rotundatis, 40-50  $\times$  18-20  $\mu$ ; paraphysibus filiformibus, simplicibus, hyalinis; sporidiis conglobatis v. distichis, hyalinis, 1-septatis, sub-constrictis 15-18  $\times$  5-7  $\mu$ .

Hab. in foliis *Vernoniae angulifoliae*, Winkle Spruit, Natal, 6/7/11, leg. E. M. Doidge (2511).

*Phaeodimeriella Capensis* Doidge n. sp.

Hypophyllis vel amphigenis, maculis effusis radiantibus, atris, 3-5 mm. diam., efficiens; hyphis radiantibus, 6-7  $\mu$  crassis; hyphopodiis continuis, alternis vel sub-oppositis; ramis oppositis; peritheciis numerosis, atris, globulosis, carbonaceis, verruculosis, 140-160  $\mu$  diam., setulosis; setis 15-25, uncinatis, circ. 55-65  $\mu$  long., basi 5  $\mu$  crassis, ad apicem obtusum leniter attenuatis; ascis numerosis, paraphysatis, ellipticis, octosporis, apice incrassatis, sessilibus, 55-70  $\times$  12-14  $\mu$ ; sporidiis sub-distichis, fuscis, 1-septatis, ellipsoidis, ad septum leniter constrictis, 16-18  $\times$  4-5  $\mu$ ; pycnidiis peritheciis similis, conidiis ellipsoidis, continuis, circ. 14  $\times$  3  $\mu$ .

In foliis *Apodytis dimidiatae*, Knysna, C.B.S., 3/6/12, leg. P. J. Pienaar (2426).

*Zukalia Transvaalensis*, Doidge n. sp.

Epiphylla, maculas tenues effusas efficiens; hyphis radiatis, ramosis, anastomosantibus, 7-8  $\mu$  crassis, e cellulis 30-32  $\mu$  longis compositis; hyphopodiis unilateralibus, plerumque laterioribus quam longis 8-10  $\times$  11-14  $\mu$ , peritheciis sparsis, numerosis, globosis, atris, 130-160  $\mu$  diam.; ascis octosporis, ellipticis v. ovatis, plerumque leniter curvatis, 70-90  $\times$  18-22  $\mu$ ; paraphysibus nullis; sporidiis distichis v. trifariis, clavatis, hyalinis, 5-septatis, utrinque obtusis, 45-55  $\times$  5-7  $\mu$ .

Hab. in foliis *Eugeniae Zeyheri*, Woodbush, Zoutpansberg Dist., 3/8/11, leg. E. M. Doidge (1759).

*Meliola Natalensis* Doidge n. sp.

Amphigena, plerumque epiphylla, maculas atras carbonaceas, rotundatas, 2–3 mm. diam. efficiens; mycelio radiante ramoso; hyphis fuscis, sub-sinuosis et saepe ad septa constrictis, 6–8  $\mu$  crassis, e cellulis 14–18  $\mu$  long compositis; ramis oppositis; hyphopodiis capitatis alternis v. unilateralibus, stipitatis, 18–21  $\mu$  long, cellula basali breve, prope hyphas angustiore; capitulo latiore quam longo 2–3 lobato, quoque lobo bi-lobulato, 12–14  $\times$  16–20  $\mu$ ; hyphopodiis mucronatis raris, sparsis, tenuibus, rectis v. recurvatis, ca. 16–18  $\times$  4–5  $\mu$ ; setis mycelicis nullis; peritheciis aggregatis, atris, globosis, carbonaceis 130–150  $\mu$  diam., rugulosis, appendiculis numerosis, subcylindraceis, larviformibus, aequalis, 40–45  $\times$  18  $\mu$ , apice interdum recurvatis; ascis bisporis; sporidiis 3-septatis, rectis v. leniter curvatis, ad septa valde constrictis, 40–44  $\times$  14–16  $\mu$ .

Hab. in foliis arboris ignotae, Umgeni prope Durban, Natal, 27/5/15, leg. E. M. Doidge (8980).

*Meliola conferta* Doidge n. sp.

Amphigena, maculas atras, suberustaceas 1–3 mm. diam. efficiens; hyphis fuscis, rectis, ramosis; 6–8  $\mu$  crassis, ex cellulis 11–18  $\mu$  longis compositis; ramis numerosis, oppositis; hyphopodiis capitatis numerosissimis, confertis, oppositis, interdum unilateralibus vel alternis 14–18  $\mu$  long; cellula superiore diverse lobata, plerumque bi-triloba, quoque lobo bilobulato, 9–14  $\times$  11–14  $\mu$ ; hyphopodiis mucronatis pallidis, 18  $\mu$  long.; setis mycelicis nullis; peritheciis (vix maturis) paucis, sparsis, 100–130  $\mu$  diam., atris, verrucosis, quibusdam cellulis externis usque 18  $\mu$  productis; ascis non visis; sporidiis atro-brunneis, 3-septatis, ad septa vix constrictis, utrinque attenuatis et rotundatis, rectis vel leniter curvatis, 43–50  $\times$  18–25  $\mu$ .

Hab. in foliis arboris ignotae, prope Durban, 14/5/1897, leg. J. Medley Wood (345), (Wood 6467).

*Meliola Podocarpi* Doidge n. sp.

Amphigena, plerumque epiphylla, maculas atras tenues, 2–5 mm. diam. efficiens; hyphis rectis v. sub-sinuosis, 6–7  $\mu$  crassis, fuscis; hyphopodiis capitatis alternis, breviter stipitatis, 14–15  $\mu$  long, cellula superiore globosa, 10–12  $\times$  10–11  $\mu$ ; hyphopodiis mucronatis non visis; setis mycelicis nullis; peritheciis sparsis v. sub-aggregatis, atris, globosis, verrucosis, 200–250  $\mu$  diam.; ascis 2–4 sporis; sporidiis 3-septatis, ad septa valde constrictis, leniter curvatis, utrinque attenuatis et rotundatis, 50–56  $\times$  14–16  $\mu$ .

Hab. in foliis *Podocarpi Thunbergii*, Woodbush, Zoutpansberg Dist., 3/8/11, leg. E. M. Doidge (1748); Knysna, C.B.S., leg. P. J. Pienaar (2436).

In foliis *Podocarpi elongatae*, Fort Cunningham, Toise River, 20/3/15, (8897).

*Meliola speciosa* Doidge n. sp.

Maculis hypophyllis, rotundatis, atris 1–5 mm. diam., hyphis ramosis, demum anastomosantibus, usque ad  $11\ \mu$  crassis, brunneis, cellulis ca.  $18\ \mu$  longis compositis; hyphopodiis capitatis numerosis, speciosis, alternis, stipitatis; cellula basali  $7\text{--}11 \times 5.5\text{--}7\ \mu$ , prope hyphae angustiora, capitulo latiore quam longiore,  $18\text{--}21.5 \times 21.5\text{--}25\ \mu$ , irregulari, 2–4 lobo, quoque lobo leviter bilobato; hyphopodiis mucronatis raris, pallidioribus, tenuibus, arcuatis, ca.  $25 \times 7\ \mu$ ; setis nullis; peritheciis aggregatis, atris,  $125\text{--}265\ \mu$  diam., basi appendiculis numerosis, subcylindratis, basi  $18\ \mu$  crassis; ascis 2-sporis, evanescentibus; sporidiis ellipsoideis, 3-septatis, leniter constrictis, brunneis  $52\text{--}61 \times 21.5\text{--}25\ \mu$ ; conidiophoris erectis, atrofusis, septatis, ca.  $150\ \mu$  longis; conidiis fusoidibus, 4-septatis, fuscis.

*M. mancae* affinis.

Hab. in foliis *Gymnosporiae* sp., Woodbush, Zoutpansberg Dist., 2/8/11, leg. E. M. Doidge (1740).

*Meliola torta* Doidge n. sp.

Amphigena, maculas atras tenues, 5–10 mm. diam. efficiens; hyphis tenuibus,  $6\text{--}7\ \mu$  crassis, tortuosis, anastomosantibus, cellulis  $25\text{--}36\ \mu$  long; ramis irregularibus plerumque unilateralibus; hyphopodiis capitatis tenuibus, cellula superiore  $14\text{--}25 \times 14\text{--}25\ \mu$ , diverse lobata, torta, apice obtusa v. convexa; hyphopodiis mucronatis, ampullaceis,  $20\text{--}36\ \mu$  long.; setis mycelicis non numerosis, sparsis, rectis, simplicibus, basi  $10\text{--}11\ \mu$  cr., apice acutis; peritheciis paucis, sparsis, atris, globulosis, rugulosis,  $160\text{--}250\ \mu$  diam.; ascis numerosis, 8-sporis; sporidiis distichis v. conglobatis, 3-septatis ad septa vix constrictis, clavatis,  $25\text{--}30 \times 7\text{--}11\ \mu$ .

Hab. in foliis *Trichocladi criniti*, Izeleni, Kingwilliamstown Dist., 8/6/15, (9064).

*Meliola peltata* Doidge n. sp.

Amphigena; maculas atras, rotundatas, pilosas, 3–7 mm. latas, interdum confluentes efficiens; mycelio peritheciigero pseudoparenchymatico, peltiformi v. flabelliformi, composito ex hyphis fuscis, ramossissimis, crebre septatis, cellulis ca.  $5.5\text{--}7 \times 11\ \mu$ ; hyphopodiis capitatis alternis, ad ramos appressis, subclavatis, stipitatis,  $39\text{--}50\ \mu$  longis, cellula superiore compressa, plerumque tuberculata v. sublobata,  $28\text{--}32\ \mu$  long.; hyphopodiis mucronatis non visis; setis mycelicis numerosis, simplicibus, rectis,  $10\text{--}11\ \mu$  crassis, usque ad  $850\ \mu$  longis, nigris, opacis, apice acuto pallidiores; peritheciis paucis, in plagulis sparsis, atris, scabris sed non verrucosis; ascis non visis; sporidiis 3-septatis, nonnunquam 2-septatis, ad septa constrictis, utrinque ca.  $50 \times 29\ \mu$ ; mycelio conidiifero inter mycelio peritheciigero intertextis, tenuiore, pallidiores; conidiophoris brunneis, torulosis, flexuosis, usque ad  $500\ \mu$  longis; conidiis fusiformibus, non septatis,  $16\text{--}18 \times 10\text{--}11\ \mu$ .

Hab. in foliis *Podocarpi Thunbergii*, Knysna, C.B.S., 3/6/12, P. J. Pienaar (2436).

*Meliola ditricha* (K. & Cke.) Doidge.

*Asterina ditricha* K. & Cke. Grevillea, 1880, p. 3.

Hypophylla, effusa, maculas, tenues, atras, 2–5 mm. diam. efficiens; hyphis radiantibus, brunneis, 7–10  $\mu$  crassis, ex cellulis 18–21  $\mu$  long. compositis; ramis plerumque oppositis, anastomosantibus; hyphopodiis capitatis alternis, stipitatis, 25–30  $\mu$  long., cellula superiore irregulare, diverse lobata, 18–23  $\times$  14–22  $\mu$ ; hyphopodiis mucronatis numerosis, oppositis v. unilateralibus, tenuibus 21–25  $\times$  7–8  $\mu$ ; setis nullis; peritheciis non numerosis, atris, globosis (immaturis) ascis non visis, sporidiis 4-septatis, atro-brunneis, ad septa constrictis, utrinque rotundatis, 54  $\times$  25  $\mu$ ; mycelio conidiophoro tenui; conidiophoris erectis, ca. 70–80  $\mu$  long., conidiis fusoidibus, 3-septatis, 15–18  $\times$  4–8  $\mu$ .

Hab. in foliis *Celastris* sp., Inanda, Natal, J. Medley Wood (Wood No. 3).

*Meliola Strophanthi* Doidge n. sp.

Amphigena, plerumque, hypophylla, sub-crustacea; maculas minutas, atras, orbiculares, 1–2 mm. diam., efficiens: mycelio peritheciigero ex hyphis flexuosis, 6–9  $\mu$  crassis, e cellulis ca. 18  $\mu$  longis compositis, brunneis, ramis oppositis; hyphopodiis capitatis alternis, breviter stipitatis, 20–25  $\mu$  long., cellula superiore cylindrica, recta v. leniter curvata, convexa, 16–18  $\times$  7–9  $\mu$ ; hyphopodiis mucronatis paucis, ampullaceis, ca. 18  $\mu$  long.; setis mycelicis nullis, peritheciis paucis, congregatis, atris, globosis 215–250  $\mu$  diam., verrucosis; ascis maturis non visis; sporidiis 4-septatis, cylindricis, ad septa vix constrictis, utrinque rotundatis 40–45  $\times$  16–18  $\mu$ ; mycelio conidiifero inter mycelio peritheciigero intertextis, pallidior, tenuiore; conidiophoris numerosis, erectis, septatis, brunneis 180–200  $\mu$  long.; conidiis fusiformibus, 3-septatis, 18–32  $\times$  5–9  $\mu$ .

Hab. in foliis *Strophanthi speciosi*, Woodbush, Zoutpansberg Dist., 3/8/11, leg. E. M. Doidge (1781).

*Meliola Bosciae* Doidge n. sp.

Epiphylla, rarius hypophylla; pelliculas tenues, suborbiculares, nigras, 2–3 mm. latas formans; hyphis radiantibus, circa perithecia crebre anastomosantibus, fuscis, septatis, plerumque curvatis, vermiculatis, 5.5–9  $\mu$  crassis; ramis oppositis, v. unilateralibus; hyphopodiis capitatis alternis v. unilateralibus, rarius oppositis, breviter stipitatis, 14–20  $\mu$  long., cellula superiore 10.5–16  $\mu$  long., scabra, convexa, truncata v. sub-lobata; hyphopodiis mucronatis plerumque prope perithecia, in ramis separatis v. inter hyphopodia capitata sparsis, oppositis v. unilateralibus, ampullaceis, apice interdum uncinatis, 14–18  $\mu$  long., basi ca. 7  $\mu$  crassis; setis mycelicis nullis;

peritheciis globosis, atris, verrucosis, 160–180  $\mu$  diam., appendiculis 6–12 sparsis, simplicis, 70–90  $\mu$  long., basi sub-bulbosis, ca. 6  $\mu$  crassis, ad apicem obtusum pellucidum attenuatis, rectis v. infra apicem abrupte curvatis; ascis 2–3 sporis, ovatis, breviter pedicellatis, mox evanescentibus; sporidiis atro-brunneis, 4-septatis constrictis, utrinque rotundatis, 39–47  $\times$  10.5–17.5  $\mu$ .

Hab. in foliis *Bosciae Caffrae*, Winkle Spruit, Natal, 6/7/12, leg. E. M. Doidge (2510).

*Meliola microspora* Pat. et Gaill.

Var. *africana* Doidge, var. nov.

Hyphopodiis capitatis 20–21.5  $\times$  7.8  $\mu$ , cellula superiore ovata 14–16  $\mu$  long.; sporidiis 26–32.5  $\times$  10.5–14  $\mu$ .

A typo differt hyphopodiis capitatis majoribus et sporidiis crassioribus.

*Meliola Toddaliae* Doidge n. sp.

Amphigena, maculas atras velutinas 2–3 mm. diam. efficiens; hyphis fuscis, ramosis, 7–10  $\mu$  crassis, cellulis 18–25  $\mu$  longis, ramis plerumque oppositis, anastomosantibus, hyphopodiis capitatis numerosis, oppositis, 18–20  $\mu$  long., stipitatis, cellula superiore sub-ovata et leniter curvata, saepe compressa, 14–16  $\times$  8–11  $\mu$ ; hyphopodiis mucronatis non numerosis, ampullaceis, 18–20  $\times$  8–10  $\mu$ ; setis mycelicis numerosis, simplicibus, rectis, demum opacis, plus minusve torulosis, 300–350  $\times$  8–10  $\mu$ ; peritheciis sparsis, in setis mycelicis absconditis, atris, globulosis, verrucosis, 200–250  $\mu$  diam.; ascis 3–4 sporis; sporidiis 4-septatis, leniter constrictis, cylindricis, utrinque rotundatis, compressis, 47–55  $\times$  18–21  $\times$  14  $\mu$ .

Hab. in foliis *Toddaliae lanceolatae*, Kentani, 16/12/14, leg. A. Pegler, (8788).

*Meliola sinuosa* Doidge n. sp.

Amphigena, plerumque hypophylla, maculas atras, velutinas, 1–5 mm. diam. efficiens; hyphis sinuosis, 5–11  $\mu$  crassis, interdum ad septa constrictis, cellulis 18–44  $\mu$  longis, ramis oppositis v. unilateralibus, saepe anastomosantibus; hyphopodiis capitatis alternis v. unilateralibus, 18–25  $\times$  12–15  $\mu$  stipitatis, cellula superiore 14–15  $\mu$  long. forma varia, subcylindrica, curvata v. sub-lobata, apice truncata v. convexa; hyphopodiis mucronatis raris, 14–15  $\times$  10–16  $\mu$ ; setis mycelicis numerosis, sparsis, erectis, simplicibus, 250–350  $\times$  8–10  $\mu$ , opacis; peritheciis sparsis, atris, globulosis, 160–220  $\mu$  diam.; ascis ellipticis-ovatis, breviter pedicellatis, bisporis, sporidiis 4-septatis, cellula media majore, cylindricis, utrinque rotundatis, ad septa leniter constrictis, 50–55  $\times$  15–18  $\mu$ .

Hab. in foliis *Trichiliae emeticae*, Lemana, Spelonken, Zoutpansberg Dist., 14/8/11, leg. E. M. Doidge (1783).



*Meliola rigida* Doidge n. sp.

Amphigena, maculas atras usque ad 1 cm. diam. efficiens; hyphis rigidis, 7–8  $\mu$  crassis, brunneis, cellulis 18–25  $\mu$  longis, ramis plerumque oppositis; hyphopodiis capitatis numerosis, oppositis breviter stipitatis 14–18  $\mu$  long., cellula superiore ovata-globulosa 10–12  $\times$  8–10  $\mu$ ; hyphopodiis mucronatis non numerosis, pallidioribus, oppositis circ. 18  $\mu$  long.; setis mycelicis erectis, simplicis, plus minusve sinuosis, atris, opacis, 250–600  $\times$  10–11  $\mu$ ; peritheciis sparsis, atris, globulosis, verrucosis, 180–220  $\mu$  diam.; ascis ovatis, breviter stipitatis, 3-sporis; sporidiis 4-septatis, leniter constrictis, oblongis, compressis, utrinque rotundatis, 40–45  $\times$  18–20  $\mu$ .

In foliis *Xymalos monosporae*, Woodbush, Zoutpansberg Dist., 3/8/11, leg. E. M. Doidge (1775).

*Meliola furcillata* Doidge n. sp.

Amphigena, maculas tenues, atras, 2–3 mm. diam. efficiens; hyphis rectis v. sinuosis, fuscis, 6–8  $\mu$  crassis, cellulis 18–21  $\mu$  long., compositis, ramis oppositis v. alternis v. unilateralibus, breviter stipitatis 18–21.5  $\mu$  long., cellula superiore ovata, recta, incurvata v. recurvata, 10.5–12.5  $\times$  7–9  $\mu$ ; hyphopodiis mucronatis inter hyphopodia capitata interspersis, 14–18  $\mu$  long., ampullaceis, collo longiore plerumque curvata; setis mycelicis prope perithecia congregatis, 330–400  $\times$  7  $\mu$ , basi opacis semel v. bis abrupte geniculatis, superne rectis, rigidis, pellucidis, plus minusve torulosis, prope apicem leniter constrictis, apice mucronatis v. 2–3 dentatis; peritheciis sparsis v. sub-aggregatis, atris, globosis, verrucosis, 160–180  $\mu$  diam.; ascis 2-sporis; sporidiis 4-septatis, cylindricis, utrinque, rotundatis, ad septa constrictis, 43–45  $\times$  16–18  $\mu$ .

Hab. in foliis *Maesae rufescentis*, Amanzimtoti, Natal, 10/7/11, E. M. Doidge (Pole Evans 1573).

*M. bidentatae* affinis.

*Meliola varia* Doidge n. sp.

Amphigena, plagulas minutas, atras, 1–2 mm. diam., efficiens; hyphis sinuatis irregulariter 7–9  $\mu$  crassis; brunneis, cellulis 18–25  $\mu$  long., compositis; ramis plerumque alternis v. unilateralibus; hyphopodiis capitatis remotis, non numerosis, alternis v. unilateralibus, 21–35  $\mu$  long., cellula superiore ovata-globosa, 14–15  $\times$  10.5–12  $\mu$ ; hyphopodiis mucronatis rarissimis, pallidioribus tenuibus ca. 11  $\times$  5–6  $\mu$ ; setis mycelis numerosis, 180–220  $\mu$  longis erectis, rigidis, stipite opaco, simplicis, 160–190  $\times$  10  $\mu$ ; superne ramosis, pellucidis, variis, aliis in ramos ternos breves (ca. 18  $\mu$ ) apice bifurcatos divisus, aliis in ramos duos (18–30  $\times$  8  $\mu$ ) patentes divisus, ramis iterum in ramulos duos v. ternos brevissimos ad apicem bi v. trifurcatos divisus; peritheciis sparsis atris, globosis, in sicco leniter collapsis, verrucosis, 160–180  $\mu$  diam., ascis non visis; sporidiis 4-septatis, ad septa vix constrictis, cylindricis, utrinque rotundatis, 45–50  $\times$  16–18  $\mu$ .

Hab. in foliis *Cissi rhomboideae*, Winter's Kloof, Natal, 26/6/11, E. M. Doidge (1639).

*Meliola bifida* Cke. Char. emend.

Caulicola et amphigena, maculas atras velutinas efficiens; mycelio ramosissimo ex hyphis 7-8  $\mu$  cr. septatis composito, cellulis 15-18  $\mu$  long.; ramis oppositis; hyphopodiis capitatis numerosissimis, confertis, oppositis, 15-18  $\mu$  long.; cellula superiore cylindrica-ovata, convexa, 11-14  $\times$  7-8  $\mu$ ; hyphopodiis mucronatis non visis; setis mycelicis numerosissimis, rigidis, 250-325  $\mu$  long.; basi 10  $\mu$  cr., apice bifidis, ramis 10-90  $\mu$  long., saepe bifidis, ramis ultimis quoque apice bi- v. trifidis; peritheciis inter setis absconditis, atris, verrucosis, 250-300  $\mu$  diam.; ascis 2-3-sporis, sporidiis brunneis, 4-septatis, cylindraceis, utrinque rotundatis, ad septa leniter constrictis, 42-50  $\times$  14-16  $\mu$ .

Hab. in foliis *Osyridicarpī natalensis*, Natal, 14/7/15, leg. J. Medley Wood (9020).

#### SUMMARY.

An account is given of the Perisporiaceæ in the Union Mycological Herbarium; this is a group of fungi well represented in South Africa, but up to the present only a few species have been described or recorded. Descriptions are given of forty-five fungi belonging to the Perisporiaceæ, of which thirty-two are *Meliolas* and seventeen are species hitherto undescribed. Each species is illustrated by drawings made to scale with the aid of the camera lucida.

BOTANICAL LABORATORIES OF THE UNION  
OF SOUTH AFRICA, PRETORIA.

## EXPLANATION OF PLATES LVII—LXVI.

### PLATE LVII.

FIG.

1. *Balladyna velutina* (B. & C.) v. Höhn. (a) Mycelium; (b) setae; (c) ascii; (d) ascospores.
2. *Dimeriella annulata* Syd. (a) Fungus on leaf; (b) perithecia; (c) ascus and spores; (d) mycelium and sarciniform conidia.
3. *Dimeriella claviseta* Doidge n. sp. (a) Perithecia; (b) ascii; (c) spores.
4. *Dimerium intermedium* Syd. (a) Pycnidium; (b) perithecia; (c) ascii with paraphyses and spores.
5. *Dimerium MacOwanianum* (Thuem.) Doidge. (a) Mycelium; (b) perithecium; (c) spores.

## PLATE LVIII.

FIG.

6. *Dimerium Psilostomatis* (Thuem.) Sacc. (a) Mycelium and perithecia; (b) spores.
7. *Dimerium Gymnosporiae* (P. Henn.) Syd. (a) Mycelium; (b) spores.
8. *Phaeodimeriella capensis* Doidge n. sp. (a) Mycelium; (b) perithecium; (c) setae; (d) asci; (e) spores; (f) conidia.
9. *Parodiella Schimperii* P. Henn. (e) Perithecia on leaf; (f) ascus and spores.
9. *Parodiella congregata* Syd. (a) Perithecia on leaf (nat. size); (b) spores; (c) asci.
9. *Parodiella perisporioides* (Berk. & Curt.) Speg. (d) Asci and spores.
10. *Zukalia transvaalensis* Doidge n. sp. (a) Mycelium; (b) asci; (c) spores.

## PLATE LIX.

11. *Meliola manca* Ell. & Mart. (a) Mycelium with capitate hyphopodia; (b) mucronate hyphopodia; (c) appendages of perithecia; (d) spores.
12. *Meliola natalensis* Doidge n. sp. (a) Mycelium with capitate hyphopodia; (b) mucronate hyphopodia; (c) appendages of perithecium; (d) spores.
13. *Meliola conferta* Doidge n. sp. (a) Mycelium with capitate hyphopodia; (b) mucronate hyphopodia; (c) cells of perithecium; (d) spores.
14. *Meliola Podocarpi* Doidge n. sp. (a) Mycelium with capitate hyphopodia; (b) spores.

## PLATE LX.

15. *Meliola speciosa* Doidge n. sp. (a) Mycelium with capitate hyphopodia; (b) mucronate hyphopodia; (c) appendages of perithecium; (d) spores.
16. *Meliola torta* Doidge n. sp. (a) Mycelium with capitate hyphopodia; (b) mucronate hyphopodia; (c) mycelial seta; (d) spores.
19. *Meliola cladotricha* Lev. (a) Mycelial seta; (b) spores.
20. *Meliola ditricha* (K. & Cke.) Doidge. (a) Mycelium with capitate hyphopodia; (b) mucronate hyphopodia; (c) spores.

## PLATE LXI.

17. *Meliola gangliferia* Kalch. (a) Mycelium with capitate hyphopodia; (b) mucronate hyphopodia; (c) mycelial setae; (d) spores.
18. *Meliola peltata* Doidge n. sp. (a) Mycelium with capitate hyphopodia; (b) tip of seta; (c) spores; (d) spore germinating.
25. *Meliola inermis* Kalch. & Cke. (a) Mycelium with capitate hyphopodia; (b) mucronate hyphopodia; (c) cells of perithecium; (d) spores.
26. *Meliola Bosciae* Doidge n. sp. (a) Mycelium with capitate hyphopodia; (b) mucronate hyphopodia; (c) perithecial setae; (d) spores.

## PLATE LXII.

21. *Meliola Hendeloti* Gaill. (a) Mycelium with capitate hyphopodia; (b) mucronate hyphopodia; (c) cells of perithecium; (d) spores.
22. *Meliola glabra* Berk. & Curt. (a) Mycelium with capitate hyphopodia; (b) mucronate hyphopodia; (c) cells of perithecium; (d) spores.
23. *Meliola Strophanthi* Doidge n. sp. (a) Mycelium with capitate hyphopodia; (b) conidiophores; (c) cells of perithecium; (d) spores.
27. *Meliola capensis* (K. & Cke.) Theiss. (a) Mycelium with capitate hyphopodia; (b) mucronate hyphopodia; (c) mycelial seta; (d) spores.

## PLATE LXIII.

FIG.

24. *Meliola Peglerae* Doidge. (a) Mycelium with capitate hyphopodia; (b) mucronate hyphopodia; (c) cells of perithecium; (d) spores.
28. *Meliola Toddaliae* Doidge n. sp. (a) Mycelium with capitate hyphopodia; (b) mucronate hyphopodia; (c) mycelial setae; (d) spores.
29. *Meliola microspora* Pat. et Gaill. (a) Mycelium with capitate hyphopodia; (b) mucronate hyphopodia; (c) mycelial setae; (d) spores.
31. *Meliola Rhois* P. Henn. (a) Mycelium with capitate hyphopodia; (b) mucronate hyphopodia; (c) mycelial seta; (d) spores.

## PLATE LXIV.

32. *Meliola microthecia* Thum. (a) Mycelium with capitate hyphopodia; (b) mucronate hyphopodia; (c) mycelial setae; (d) spores.
33. *Meliola sinuosa* Doidge n. sp. (a) Mycelium with capitate hyphopodia; (b) mucronate hyphopodia; (c) mycelial seta; (d) spores.
35. *Meliola rigida* Doidge n. sp. (a) Mycelium with capitate hyphopodia; (b) mucronate hyphopodia; (c) mycelial setae; (d) spores.
38. *Meliola Woodiana* Sacc. & Syd. (a) Mycelium with capitate hyphopodia; (b) mucronate hyphopodia; (c) mycelial setae; (d) spores.

## PLATE LXV.

30. *Meliola amphitricha* Fr. (a) Mycelium with capitate hyphopodia; (b) mucronate hyphopodia; (c) mycelial seta; (d) spores.
34. *Meliola polytricha* K. & Cke. (a) Mycelium with capitate hyphopodia; (b) mycelial seta; (c) spores.
39. *Meliola furcillata* Doidge n. sp. (a) Mycelium with capitate and mucronate hyphopodia; (b) mycelial setae; (c) cells of perithecium; (d) spores.
40. *Meliola varia* Doidge n. sp. (a) Mycelium with capitate hyphopodia; (b) mucronate hyphopodia; (c) mycelial setae; (d) spores.

## PLATE LXVI.

36. *Meliola falcata* Syd. (a) Mycelium with capitate hyphopodia; (b) mucronate hyphopodia; (c) mycelial setae; (d) spores.
37. *Meliola arcuata* Doidge. (a) Mycelium with capitate hyphopodia; (b) mucronate hyphopodia; (c) mycelial setae; (d) spores.
41. *Meliola bifida* Cke. (a) Mycelium with capitate hyphopodia; (b) mycelial setae; (c) spores.
42. *Meliola leptidea* Syd. (a) Mycelium with capitate hyphopodia; (b) mycelial setae; (c) spores.